Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

5/28/2015

Certified Mail

Yes	TOXIC REVIEW
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
Yes	MODELING SUBMITTED
Yes	SYNTHETIC MINOR TO AVOID TITLE V
Yes	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Joe Cochran
SRT Sales and Service
P.O. BOX 14569
COPLEY, OH 44321

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE

Facility ID: 1576001860
Permit Number: P0110589
Permit Type: Renewal
County: Stark

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install and Operate (PTIO)for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, The Canton Repository. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page,www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
Permit Review/Development Section
Ohio EPA, DAPC
50 West Town Street Suite 700
PO Box 1049
Columbus, Ohio 43216-1049

and

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted.Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now.If you have any questions, please contact Canton City Health Department at (330)489-3385.

Sincerely,

Michael E. Hopkins, P.E.
Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA Region 5*Via E-Mail Notification*
Canton; Pennsylvania; West Virginia

Permit Strategy Write-Up

Permit Description:

FEPTIO for misc metal parts coating lines K001 and K002, with synthetic minor restrictions to avoid Title V for single HAP, total HAPs and VOCs. First operating permit being processed as a renewal. Includes admin modifications to PTI 15-1300 to correct errors made in potential-to-emit calculations and to remove voluntary limitations of 128 lb/day and 20 tpy OC emissions per spray booth that were mistakenly identified as BAT. Replaces voluntary facility-wide restriction of 35 tpy OC with synthetic minor restriction of 99.0 tpy for VOC.Expands rule-based VOC content limitations to include qualifying clear coatings, zinc rich primers and extreme performance coatings. Also combines K001 and K002 into a single EU group.

1. **Key items:**

   ✓ Reason for Draft permit issuance: changes made to the synthetic minor restrictions in PTI 15-1300. See table in Section 6.2 below.

   ✓ Recalculation of potential-to-emit (PTE) based upon updated information provided by the facilityin addition to information provided in application No. A0045271, which was received 8/2/2012.

   ✓ Determination regarding whether this permit could be processed as a Chapter 31 Modification as requested in application No. A0045271.

   ✓ Determination regarding which changes requested by the permittee in application No. A0045271 are permissible and can be incorporated into this permit. This includes a review of the estimates and/or assumptions used to establish emissions limitations as BAT in PTI 15-1300.

2. **FEPTIO No. P0110589 includes the following permitting actions:**

   ✓ As a permit to install (PTI), P0110589 supersedes PTI No. 15-1300.

   ✓ As a permit to operate (PTO), P0110589 has been categorized as a renewal permit by policy, even though it is actually the first operating permit for emissions units K001 and K002 following the initial installation PTI No. 15-1300, issued 8/27/1997, and the State PTO applications received in May 1997*.

   *Comments:

   There were two PTO applications submitted in May 1997: an initial and an amended version. These are identified in STARS2 as A0032845 and A0043363. This was prior to the creation of the combined Permit-to-Install and Operate (PTIO) in Ohio, so this permit was initially intended to be a Federally Enforceable State Operating Permit (FESOP), with facility-wide synthetic minor restrictions to avoid Title V being carried over from PTI No. 15-1300.

   Processing of thefirst operating permit was delayed due to other priorities, and it has been on backlog status since 1997, with the facility operating under the application shield. During a site visit on 9/6/2007, the inspector from Canton City Health Department asked the facility to review their 1997 application and re-submit with any updates. In November 2007 the facility responded by saying that there had been no changes to the original PTO application. A February 2008

memo in CETA stated that "Canton was processing the PTO," but little progress was actually made at that time due to personnel changes and job reassignments.

When STARS2 went live on June 30, 2008, the backlogged operating permit was assigned No. P0101084. But by Aug 2, 2012, when application No. A0045271 was received requesting modifications to the PTI, there still had been very little progress made on the existing backlogged operating permit (P0101084). The modification permit had been assigned No. P0110589, and when work on it was nearing completion in Feb 2015, a decision was made by Canton APC to dead-end the never-completed operating permit (P101084) and combine both workflows into a single FEPTIO "renewal" permit, which would be issued under the newer number, P0110589.

3. **Source Description:** SRT Sales and Service is an existing FEPTIO facility located in Perry Township, Stark County. From 1997 – 2008 the name was Midwest Tank Services. In 2009, an ownership change resulted in a name change to Tank Services. Then in late 2013 there was another ownership change and the facility name was changed to SRT Sales and Service.

   The facility can best be described as a specialty corrosion coatings applicator for metal parts and structures, often those utilized by the oil and gas industry.

   Emission sources at the facility consist of a blast booth that has previously been determined to be de minimis (although this may need to be revisited as a separate action), and two identical paint spray booths, K001 and K002. Each paint spray booth includes a 3.11 mmBtu/hr natural gas-fired heater to provide heated air to the booth to speed up flash-off & ensure proper film formation. The heaters are capable of supplying air at maximum temperature that is 70 degrees F above the outside ambient air. So for worst-case summer conditions, the max temperature would be about 170 degrees F.

4. **Facility Emissions and Attainment Status:** The facility's Permitting Classification is FEPTIO, and the Emissions Reporting Category is SMTV (Synthetic Minor Title V). The facility is located in an attainment area for all criteria pollutants, assuming that Stark County maintains attainment status for $PM_{2.5}$ once reevaluation to the 2013 annual standard of 12.0 $\mu g/m^3$ is completed. Regardless, it should be noted that facility stack emissions of $PM_{2.5}$ are negligible considering the filter systems on K001, K002, and the baghouse on the grit blast booth. The facility is located in an Appendix A area with respect to fugitive dust.

5. **Source Emissions:**

   For this permit, potential emissions were recalculated based on updated information provided by the facility. See Appendix A1 at the end of this document for calculation details. A summary is presented below for potential emissions from the application of coatings and from cleaning material usage. Emissions from the combustion of natural gas in the paint booth heaters were considered negligible and so they are not included in the following table (see Appendix A2 for details).

   Potential-to-Emit Summary, without synthetic minor restrictions, for coatings and cleaning materials:

	K001 and K002 each		K001 and K002 total
	lb/hr[1]	ton/yr[1]	ton/yr[2]
PE/PM UNCONTROLLED	24.0	78.84	157.68[3]
PE/PM CONTROLLED	0.24	0.79	1.58
VOC	29.26	96.12	192.24
Total HAPs	N/A	N/A	> 25
Single HAP	N/A	N/A	> 10
Single TAC	N/A	N/A	> 1.0

Notes:

1. The lb/hr values above represent the maximum for a single hour. There is no direct relationship between the maximum short-term PTE and the tons per year PTE because of physical and operational limitations that prevent spraying for the full 8760 hours per year. See Appendix A1 for further explanation.
2. Facility-wide PTE in tons per year is primarily of significance with respect to Title V major source thresholds (100 tpy for criteria pollutants, 10 tpy for individual HAPs, and 25 tpy for total HAPs). For those pollutants that exceed the applicable threshold, synthetic minor restrictions can be taken to limit emissions in order to avoid Title V permitting requirements.
3. If another federally enforceable rule already limits emissions below a threshold, then synthetic minor restrictions are not required. This is true for PE/PM, where uncontrolled PTE is irrelevant because OAC rule 3745-17-11(C) requires controls.

6. Conclusions:

6.1 Chapter 31 Modification?

In permit application No. A0045271, received 8/2/2012, the permittee's stated reason for the application was a "Chapter 31 modification to increase allowable daily emissions." The permit that was to be modified was PTI 15-1300, issued 8/27/1997.

Question: Has there been a "Chapter 31 modification?" I.e., have there been any physical changes, or changes in the method of operation that meet the definition of "modification" in OAC Chapter 3745-31?

Answer: *No.* There has not been a qualifying modification, so the permit cannot be processed as a Chapter 31 Modification. Also, some of the increases in allowable emissions requested in application A0045271 are not permissible, as described in section 6.3 below. Instead, it was decided by Canton APC that this permit would combine some administrative corrections/modifications with the long-overdue first operating permit for this facility (which by policy has to be processed in STARS2 as a "renewal" operating permit, even though it is actually the *first* operating permit).

6.2 Summary of requested and accepted changes:

The following table presents an itemized comparison between the initial installation permit (PTI 15-1300), the changes requested by the permittee (application A0045271, received 8/2/2012), and whether or not the requested change was accepted for this permit:

PTI 15-1300	Requested Change (A0045271)	New Permit P0110589
General: lb/day &tpy emissions limits for OC.	Change OC to VOC.	Chg from OC to VOC accepted[1]
3745-21-09(U)(1): Daily vol-weighted avg VOC content of coatings ≤ 3.5 lb_{VOC}/gal excl water and exempt solvents. Also cited as part of the BAT determination.	Re-define 3.5 lb/gal for "any coating" dried at ≤ 200 deg F, unless one of two less-restrictive limits apply: 4.3 lb/gal for clear coatings and 4.0 lb/gal for zinc	All accepted per 3745-21-09(U)(1) (a), (b), and (d), plus added (c) for extreme performance coatings.[2]

	rich coatings.	
3745-31-05(A)(3)-BAT: 128 lb OC/day, each booth	542.5 lb VOC/day, 2 booths combined.	Daily emissions limit *removed*[3]
20 tons OC/year, each booth	Appears to remove the tpy limit per booth in favor of a new syn. minor limit of 99.0 tpy for VOC, 2 booths combined.	20 tons OC/yr per booth *removed*[4]
0.17 tons PM/year, each booth	Appears to remove tpy BAT limit for PM in favor of 0.551 lb PM/hr and filter req's per 3745-17-11(B) and (C) respectively.	0.17 tons PM/yr per booth and all other mass emissions limits for PM *removed*[4]
BATforVOC=3745-21-09(U)	No change requested.	BATforVOC=3745-21-09(U)(1) BAT for PE=3745-17-11(C) and fully enclosed spray booth.
3745-31-05(D) [as eff. 1997] - synthetic minor restrictions to avoid Title V: 9.9 tpy 1-HAP, rolling 12-months, 2 booths combined	No change requested.	No change.
24.9 tpy tot HAPs, rolling 12-months, 2 booths combined	No change requested.	No change.
------	New syn. minor limit of 99.0 tpylimitfor VOC, rolling 12-months, 2 booths combined.	New syn. minor limit of 99.0 tpy limitfor VOC, rolling 12-months, 2 booths combined – accepted.[5]
------	------	Use natural gas only.[5]
Voluntary restriction: 35 tons OC/yr, rolling 12-months, 2 booths combined(no applicable rule was cited).	Replace w/ syn. minor limit of 99.0 tpy for VOC and 155 gal/day coatingusage restriction, 2 booths combined.	New syn. minor limit of 99.0 tpy for VOC, 2 booths combinedwas accepted,[6] but the155 gal/day coating usage limitwas *not* accepted.[7]
3745-17-07(A)(1): 20% opacity as six-min avg except where provided by rule.	No change requested.	Opacity limits *removed* because3745-17-07(A) no longer applies.[8]
3745-17-11(B)(2): 0.551 lb PM/hr	No change requested.	PE/PM lb/hr limit

		removed because 3745-17-11(B) no longer applies.[9]
"Best Available Control Technology" as listed in paragraph A.2. of PTI 15-1300	No change requested.	The portions from the PTI that were still considered applicable were incorporated into the Operational Restrictions. The term "Best Avail - able Control Technology" was *removed* as an administrative correction.[10]

Notes for the table above:

1. The requested change from OC to VOC was accepted as a valid update, because VOC is a criteria pollutant and also because there are no rule-based requirements for OC for metal parts coating operations.

2. In PTI 15-1300, there was an oversight whereby allowable VOC content limits above 3.5 lb/gal for qualifying special coatings were not considered (e.g., 3745-21-09(U)(1) allows 4.3 lb/gal for "clear coatings" and 4.0 lb/gal for "zinc rich primer coatings.") The facility received an NOV dated 6-4-2012 for exceeding the 3.5 lb/gal limit. This was one of two NOVs that prompted the facility's request for a permit modification to allow higher VOC content for clear coatings and zinc rich primers.

3. Both the daily limit for OC in the original PTI and the requested increase in the application for the new permit were based on faulty assumptions. The problem with the original daily limit is explained in section 6.2 above, and the problem with the requested increase is explained in the next paragraph. Because short-term emissions are effectively controlled by the lb/gal VOC content limits in OAC rule 3745-21-09(U), and because the original BAT determination included "compliance with 3745-21-09(U)," a decision was made to remove a daily limit altogether.

   The requested new VOC limit of 542.5 lb/day for both booths combined was not based on *any* estimate of daily coating usage capacity, but rather was calculated by working backwards from the requested new synthetic minor limit of 99.0 tpy for VOC (99.0 tons ÷ 365 days x 2000 lb/ton = 542.5 lb/day). There is no need for a daily limit. See more in Note 5.

4. See section 6.2 above for explanation..

5. As shown above in section 5 above and Appendix A1, the potential-to-emit for VOC exceeds 100 tpy. The use of only natural gas in the paint booth heaters is an additional condition related to the synthetic minor restrictions.

6. The original limitation of 35 tons OC/yr as a rolling, 12-month summation for both booths combined seems to have been a voluntary restriction. It was not specified as BAT and seems to have served no real purpose. The facility requested that this restriction be replaced by the new syn. minor restriction of 99.0 tpy for VOC.

7. The proposed restriction of 155 gal/day total coating usage was not acceptable, because it is greater than the maximum daily capacity for spraying, which is only 96 gallons based on the most extreme assumption (8.0 gal/hr per booth x 2 booths x 24 hr = 96 gal). Further, the proposed 155 gal/day restriction wasn't based on anything other than the proposed new daily limit of 542.5 lb_{VOC}/day, which, as explained in Note 3 above, is not needed. 155 gal/day was derived as follows: 542.5 lb_{VOC}/day ÷ 3.5 lb_{VOC}/gal = 155 gal/day.

8. OAC rule 3745-17-07(A) no longer applies to these surface coating operations because they qualify for an exemption pursuant to 3745-17-07(A)(3)(h), which exempts sources that are not subject to any mass emission limitations. The reason for this is because surface coating operations are now subject to paragraph (C), rather than paragraph (B) of OAC rule 3745-17-11, and paragraph (C) contains no mass emission limitations.

9. As stated in note 8, surface coating operations are now subject to paragraph (C), rather than paragraph (B) of OAC rule 3745-17-11. Paragraph (C) did not exist when the original PTI was issued in 1997.

10. The term "Best Available Control Technology" was incorrectly used in PTI 15-1300. The PTI contained a list of what appear to be work practice requirements in section A.2., and some of the items listed are more like recommendations and would not appear in a present-day permit. I found out that PTI 15-1300 was actually copied, at least in part, from an earlier PTI written by SEDO, because this facility was originally located in Tuscarawas County, then moved to Stark County.

7. Additional notes or comments:

1. See Appendix A1 for emissions calculations for coating and cleaning material usage.

2. See Appendix A2 for emissions calculations for the combustion of natural gas.

8. Total Permit Allowable Emissions Summary (for informational purposes only):

Pollutant	Tons Per Year
Any individual HAP	9.9
Total combined HAPs	24.9
VOC	99.0

Appendix A1

Potential-to-emit calculations from coatings and cleaning materials

Updated Process Information:

The maximum possible coating spray rate is 8 gallons in one hour, *per booth*, as provided by the facility on 1/27/2015 (email from Melissa Bair to Carl Safreed). This is the maximum rate for a SINGLE hour, and is not based on any kind of averaging over a multiple-hour period. For informational purposes, the email also said that while 8 gallons in one hour is the maximum possible, they average more like 3 - 4 gallons per hour *while they are spraying*—so again, this is not an average over an entire shift or day.

The one-hour peak spray rate cannot realistically be used to calculate long-term emissions, because there are physical and operational process limitations that reduce the maximum amount of time during which spraying can occur. Examples of the limitations include preparation, drying time in the booth, paint color change-over, and moving parts into and out of the booth. With this in mind, an estimate was made that the facility could actually spray no more than 75% of the total available time. The annual potential-to-emit (PTE) calculations below include this assumption, i.e., instead of being based on 8760 hr/yr, they are based on 6570 hours (75% x 8760 = 6570). The purpose was not to argue that the facility is a natural minor, but rather to show that even with the reduced-hour assumption they still exceed Title V major source thresholds.

1. VOC

Both short-term and long term potential-to-emit (PTE) were calculated for VOC because PTI 15-1300 has both types of limitations under BAT (although the limits are for OC not just VOC). For the present permit, only VOC is of interest, and potential emissions come from both coating and cleaning materials.

For coating materials, the short-term PTE for VOC can be estimated based on the maximum spray rate of 8 gal/hr per booth and the rule-based limit of 3.5 lb VOC/gal from OAC 3745-21-09(U)(1), which is applicable for the vast majority of coatings used at the facility.

$(8.0\ gal/hr)_{PER\ BOOTH} \times (3.5 lb_{VOC}/gal) = 28 lb_{VOC}/hr_{PER\ BOOTH\ -\ COATINGS}$

For cleaning materials, we are interested in the net gallons used, i.e., the amount of cleaning solvent that evaporates, thus becoming air emissions. Short-term (lb/hr) emissions are difficult to estimate, but for the purpose of these calculations, a simplifying assumption will be made by dividing the estimated total annual gallons used by the hours spent spraying (75% x 8760 = 6570 hrs as described in Updated Process Information, above), then dividing by 2 because there are two booths. MEK (6.71 lb_{VOC}/gal) is currently the only cleaning material used. A very rough, but conservative assumption was made that maximum annual net gallons might be three times the amount used in 2013, taking into account that the 2013 total was reduced because of a 4th qtr business disruption due to a change of ownership, and because they ran at most just 2 shifts. The facility used 825 gal of MEK in 2013, so based on the stated assumptions, the estimated maximum annual usage is 3 x 825 gal = 2475 gal. Dividing 2475 gal by two gives 1237.5 gal per booth. .

$(1237.5\ gal/yr)_{PER BOOTH} \div (0.75 \times 8760\ hr/yr) \times (6.71 lb_{VOC}/gal)_{MEK} = 1.26\ lb_{VOC}/hr_{PER\ BOOTH\ -\ CLEANING\ MAT'LS}$

For coatings and cleaning materials combined, the estimated hourly PTE per booth is as follows:

$(28 lb_{VOC}/hr)_{PER\ BOOTH\ -\ COATINGS} + (1.26\ lb_{VOC}/hr)_{PER\ BOOTH\ -\ CLEANING\ MAT'LS} = 29.26\ lb_{VOC}/hr_{TOTAL\ PER\ BOOTH}$

The estimated annual PTE per booth and for both booths are as follows:

$(29.26\ lb_{VOC}/hr)_{TOTAL\ PER\ BOOTH} \times (0.75 \times 8760\ hr/yr) \div (2000\ lb/ton) = 96.12 ton_{VOC}/yr_{TOTAL\ PER\ BOOTH}$

$(96.12 ton_{VOC}/yr)_{TOTAL\ PER\ BOOTH} \times (2)_{BOOTHS} = 192.24\ ton_{VOC}/yr_{TWO\ BOOTHS}$

Conclusion: The facility-wide PTE for VOC far exceeds the Title V 100 tpy threshold, soif there were no other limitations the facility would need synthetic minor restrictions to avoid Title V. In application A0045271, received 8/2/2012, the permittee did in fact request a new federally enforceable limitation of 99.0 tpy VOC. It should be noted that PTI 15-1300 had BAT emission limitations of 20 tpy VOC for each booth, but as discussed in section 6.2 of this PSWU, that BAT limitation was determined to have been based on faulty assumptions as has been removed.

2. Individual HAPs

For individual HAPs, only facility-wide, long term PTE (tpy) was of interest in order to confirm that synthetic minor limitations were still needed to avoid Title V.

Potential HAP emissions were considered from coating materials only, because at this time the only cleaning material used at facility is MEK, which is not a HAP. The permit will still require recordkeeping for all sources of HAP emissions, including any that may come from cleaning materials. Basing PTE only on coatings is also a conservative measure regarding major source thresholds.

For individual HAPs, the potential-to-emit *could* be based upon a worst-case assumption that *all* VOC in *all* coating materials consists of a single HAP. Under this extreme assumption, PTE for VOC and the assumed single-HAP would be identical. Instead of going to those extremes, however, a more realistic approach was taken to assess PTE for individual HAPs at this facility. The approach, as shown below, was to calculate what the average coating content of an individual HAP would need to be for the facility to exceed the Title V major source threshold of 10 tpy. As with the VOC calculations above, a maximum spray rate of 8 gal/hr for each of two booths was used, plus the assumption that only 75% of the total hours per year are actually available for spraying.

Let $\mathbf{C_{1\text{-}HAP}}$ = the average coating content of any individual HAP, in pounds per gallon as-applied, that would result in facility-wide emissions of ten tons per year.

$(8.0\ gal/hr)_{1\text{-}BOOTH} \times (2)_{BOOTHS} \times (\mathbf{C_{1\text{-}HAP}}) \times (0.75 \times 8760\ hr/yr) \div (2000\ lb/ton) = 10.0\ ton_{1\text{-}HAP}/yr$

Solving for $\mathbf{C_{1\text{-}HAP}}$:

$\mathbf{C_{1\text{-}HAP}} = (10.0\ ton_{1\text{-}HAP}/yr) \times (2000\ lb/ton) \div [(8.0\ gal/hr)_{1\text{-}BOOTH} \times (2)_{BOOTHS} \times (0.75 \times 8760\ hr/yr)]$

$= 0.19\ lb/gal$

Conclusion:Based on coatings formulation data provided by the permittee, several commonly-used coatings contain more than 0.19 lb/gal of HAPs xylene, ethyl benzene, toluene, or MIBK as-applied, so without synthetic minor restrictions the facility's emissions could easily exceed the 10 tpy Title V threshold. For this reason, the permittee requested that the present permit retain a federally enforceable limitation on the potential to emit of 9.9 tpy for any individual HAP. Pursuant to OAC 3745-31-05(D)(2), the limitation will be based on a 12 month, rolling summation of the monthly emissions, with compliance to be demonstrated by material formulation and usage recordkeeping.

3. Total HAPs

The approach taken for total HAPs is the same as explained above for individual HAPs, except that the calculations were looking at what the average coating content of total HAPs would need to be for the facility to exceed the Title V major source threshold of 25 tpy. Again, a maximum spray rate of 8 gal/hr for each of two booths was used, plus the assumption that only 75% of the total hours per year are actually available for spraying.

Let $\mathbf{C_{HAPS}}$ = the average coating content of total HAPs, in pounds per gallon as-applied, that would result in emissions of twenty-five tons per year.

$(8.0\ gal/hr)_{1\text{-}BOOTH} \times (2)_{BOOTHS} \times (\mathbf{C_{HAPS}}) \times (0.75 \times 8760\ hr/yr) \div (2000\ lb/ton) = 25.0 ton_{HAPS}/yr$

Solving for $\mathbf{C_{HAPS}}$:

$\mathbf{C_{HAPS}} = (25.0 ton_{HAPS}/yr) \times (2000\ lb/ton) \div [(8.0\ gal/hr)_{1\text{-}BOOTH} \times (2)_{BOOTHS} \times (0.75 \times 8760\ hr/yr)]$

$= 0.48\ lb_{HAPS}/gal$

Conclusion:Based on coatings formulation data provided by the permittee, many commonly-used coatings contain more than 0.48 lb/gal of total HAPs as-applied, so without synthetic minor restrictions the facility's emissions could easily exceed the 25 tpy Title V threshold. For this reason, the permittee requested that the present permit retain a federally enforceable limitation on the potential to emit of 24.9 tpy for total HAPs. Pursuant to OAC 3745-31-05(D)(2), the limitation will be based on a 12 month, rolling summation of the monthly emissions, with compliance to be demonstrated by material formulation and usage recordkeeping.

4. Particulate emissions (PE):

The facility-wide potential-to-emit for PE was estimated for the coating spray process based on a conservatively-high representative coating with a solids content of 10 lb/gal, and a maximum spray rate of 8 gal/hr per booth. Again as described above, an assumption was made that only 75% of the total hours per year are actually available for spraying. In addition, an estimated transfer efficiency of 70% and a control efficiency of 99% was used.

Before controls:

$(8.0\ gal/hr)_{PER\ BOOTH} \times (10.0 lb_{SOLIDS}/gal) \times (1 - 0.70_{TRANSFER\ EFF.}) = 24.0 lb_{PE}/hr_{PER\ BOOTH\ BEFORE\ CONTROLS}$

$(24.0 lb_{PE}/hr)_{PER\ BOOTH} \times (0.75 \times 8760\ hr/yr) \div (2000\ lb/ton) = 78.84 ton_{PE}/yr_{PER\ BOOTH\ BEFORE\ CONTROLS}$

$(78.84 ton_{PE}/yr)_{PER\ BOOTH} \times (2)_{BOOTHS} = 157.68 ton_{PE}/yr_{TWO\ BOOTHS\ BEFORE\ CONTROLS}$

After controls:

$(8.0\ gal/hr)_{PER\ BOOTH} \times (10.0 lb_{SOLIDS}/gal) \times (1 - 0.70_{TRANSFER\ EFF.}) \times (1 - 0.99_{CONTROL\ EFF}) = 0.24 lb_{PE}/hr_{PER\ BOOTH\ AFTER\ CONTROLS}$

$(0.24 lb_{PE}/hr)_{PER\ BOOTH} \times (0.75 \times 8760\ hr/yr) \div (2000\ lb/ton) = 0.79 ton_{PE}/yr_{PER\ BOOTH\ AFTER\ CONTROLS}$

$(0.79 ton_{PE}/yr)_{PER\ BOOTH} \times (2)_{BOOTHS} = 1.58 ton_{PE}/yr_{TWO\ BOOTHS\ AFTER\ CONTROLS}$

Conclusion: Although the facility-wide PTE exceeds 100 tpy for PE before controls, synthetic minor restrictions are not required to avoid Title V because OAC rule 3745-17-11(C) requires controls. Even though OAC rule 3745-17-11(C) does not specify a control efficiency requirement, even assuming a worst case of 90% control efficiency, the facility would only have $7.88 ton_{PE}/yr_{TOTAL\ AFTER\ CONTROLS}$.

Appendix A2
Potential-to-emit calculations from the combustion of natural gas

For the paint spray booths included in this permit (EUs K001 and K002), natural gas is burned toheat air to a maximum of about 170 degrees F after the coating is applied in order to speed up flash off and ensure proper film formation. The top four pollutants from the combustion of natural gas, ranked from highest to lowest, are NOx, CO, PE/PM, and VOC. The calculations below demonstrate that emissions of these pollutants from the heaters can be considered negligible.

Natural gas consumption:

Each emissions unit has a natural gas-fired heater rated at 3.11 mmBtu/hr, so for each EU, the maximum hourly gas consumption would be as follows:

$(3.11 \times 10^6$ Btu/hr) ÷ (1020 Btu/scf gas) = 0.00305×10^6scf gas/hr

VOC emissions:

Emission factor: 5.5 lb VOC per million scf natural gas burned (AP 42, Fifth Edition, Table 1.4-2).
Note: This EF includes 1.88 $lb_{VOC}/10^6$scfof HAPs. See HAP calculations on the next page.

(5.5 $lb_{VOC}/10^6$scf gas) x (0.00305×10^6scf gas/hr) = 0.017 lb_{VOC}/hr

(0.017 lb_{VOC}/hr)x (24 hr/day) = 0.41 lb_{VOC}/day

(0.017lb_{VOC}/hr) x (8760 hr/yr) ÷ (2000 lb/ton) = 0.07 ton_{VOC}/yr

Particulate emissions (PE):

Emission factor: 7.6 lb PE per million scf natural gas burned (AP 42, Fifth Editon, Table 1.4-2).

(7.6 $lb_{PE}/10^6$scf gas) x (0.00305×10^6scf gas/hr) = 0.023lb_{PE}/hr

(0.023lb_{PE}/hr) x (24 hr/day) = 0.56 lb_{PE}/day

(0.023lb_{PE}/hr) x (8760 hr/yr) ÷ (2000 lb/ton) = 0.10ton_{PE}/yr

Nitrogen oxides (NOx):

Emission factor: 94 lb_{NOx} per million scf natural gas burned (AP 42, Fifth Edition, Table 1.4-1: residential furnace).

(94 lb_{NOx} /10^6scf gas) x (0.00305×10^6scf gas/hr) = 0.287lb_{NOx}/hr

(0.287lb_{NOx}/hr) x (24 hr/day) = 6.89 lb_{NOx}/day

(0.287lb_{NOx}/hr) x (8760 hr/yr) ÷ (2000 lb/ton) = 1.26ton_{NOx}/yr

Carbon monoxide (CO):

Emission factor: 40 lb_{CO} per million scf natural gas burned (AP 42, Fifth Edition, Table 1.4-1: residential furnace).

(40 lb_{CO} /10^6scf gas) x (0.00305 x 10^6scf gas/hr) = 0.122lb_{CO}/hr

(0.122lb_{CO}/hr) x (24 hr/day) = 2.93 lb_{CO}/day

(0.122lb_{CO}/hr) x (8760 hr/yr) ÷ (2000 lb/ton) = 0.53ton_{CO}/yr

HAP emissions:

Emission factor: 1.89lb HAPs per million scf natural gas burned, based on AP 42, Fifth Edition, Tables 1.4-3 (organic HAPs) and 1.4-4 (metal HAPs).
Note: In the above EF (1.89 lb_{HAP}/10^6scf) 1.8 = hexane, 0.08 = all other organic HAPs, and 0.01 = metal HAPs. So except for the trace amount of metal HAPs, the emissions calculated here are a subset of the VOC emissions calculated on the preceding page.

(1.89lb_{HAP}/10^6scf gas) x (0.00305 x 10^6scf gas/hr) ≈0.006lb_{HAP}/hr

(0.006lb_{HAP}/hr)x (24 hr/day) = 0.14 lb_{HAP}/day

(0.006lb_{HAP}/hr) x (8760 hr/yr) ÷ (2000 lb/ton) = 0.026ton_{HAP}/yr

Since nearly all of the HAPs from the combustion of natural gas is hexane, a conservative assumption will be made that the PTE for highest individual HAP and total HAPs are the same (0.026 ton/yr).

Summary:

Potential-to-emit for the combustion of natural gas:
(rounded to three decimal places for lb/hr and two decimal places for lb/day and ton/yr)

	EUs K001 & K002		**each**	K001+K002
	lb/hr	lb/day	ton/yr	ton/yr
PE/PM	0.023	0.56	0.10	0.20
NOx	0.287	6.89	1.26	2.52
CO	0.122	2.93	0.53	1.06
VOC	0.017	0.41	0.07	0.14
1-HAP	0.006	0.14	0.03	0.06
Total HAPs	0.006	0.14	0.03	0.06

Conclusion:

Emissions from the combustion of natural gas do not need to be included in the permit.

Supporting reasons:

1. The heaters are rated at 3.11 mmBtu/hr each, and if they were stand-alone sources, they would qualify for the less-than-ten mmBtu/hr permanent exemption in OAC rule 3745-31-03.

2. For NOx and CO, the potential-to-emit is less than 10 lb/day for each emissions unit, and the combustion of natural gas is the only source of these pollutants. Per the instructions on the PTIO application, the permittee is not required to provide emissions information for those pollutants with maximum uncontrolled emissions of less than 10 lb/day.

3. For PE/PM, the potential-to-emit is 0.023 lb/hr, which is trivial compared with 0.24 lb/hr per booth (after controls) from the coating operation. More importantly, because these emissions units are surface

coating operations, they are exempt from mass emissions limitations for particulates in OAC rule 3745-17-11(B) for particulates and are instead the work practice and control requirements in OAC rule 3745-17-11(C).

4. For VOC, the potential-to-emit is 0.14 ton/yr for both booths combined. When added to the synthetic minor limit of 99.0 ton/yr for VOCs from the coating operations, the total (99.14 ton/yr) is still below the Title V threshold of 100 ton/yr.

5. For highest individual HAP and total HAPs, the potential-to-emit is 0.06 ton/yr for both booths combined. When added to the synthetic minor limits of 9.9 ton/yr and 24.9 ton/yr for individual and total HAPs respectively from the coating operations, the totals (9.96 ton/yr and 24.96 ton/yr) are still below the Title V thresholds of 10 ton/yr and 25 ton/yr, respectively.

PUBLIC NOTICE

The following matters are the subject of this public notice by the Ohio Environmental Protection Agency. The complete public notice, including any additional instructions for submitting comments, requesting information, a public hearing, or filing an appeal may be obtained at:http://epa.ohio.gov/actions.aspx or Hearing Clerk, Ohio EPA, 50 W. Town St., Columbus, Ohio 43215. Ph: 614-644-2129 email:HClerk@epa.ohio.gov

Draft Air Pollution Permit-to-Install and Operate Renewal
SRT Sales and Service
4936 Southway St. SW,, Canton, OH 44706
ID#:P0110589
Date of Action: 5/28/2015
Permit Desc:FEPTIO renewal permit for miscellaneous metal parts coating lines K001 and K002, with synthetic minor restrictions to avoid Title V for single HAP, total HAPs and VOCs (includes administrative modifications to correct errors made in potential-to-emit calculations, to remove voluntary limitations of 128 lb/day and 20 tpy OC emissions per spray booth that were mistakenly identified as BAT, replace voluntary facility-wide restriction of 35 tpy OC with synthetic minor restriction of 99.0 tpy for VOC, expand rule-based VOC content limitations to include qualifying clear coatings, zinc rich primers and extreme performance coatings and combines K001 and K002 into a single EU group)..
The permit and complete instructions for requesting information or submitting comments may be obtained at: http://epa.ohio.gov/dapc/permitsonline.aspx by entering the ID # or: Carl Safreed, Canton City Health Department, 420 Market Avenue, Canton, OH 44702-1544. Ph: (330)489-3385

DRAFT

Division of Air Pollution Control
Permit-to-Install and Operate
for
SRT Sales and Service

Facility ID:	1576001860
Permit Number:	P0110589
Permit Type:	Renewal
Issued:	5/28/2015
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance

Ohio Environmental Protection Agency

Division of Air Pollution Control
Permit-to-Install and Operate
for
SRT Sales and Service

Table of Contents

Authorization

Facility ID: 1576001860
Application Number(s): A0032845, A0043363, A0045271
Permit Number: P0110589
Permit Description: FEPTIO renewal permit for miscellaneous metal parts coating lines K001 and K002, with synthetic minor restrictions to avoid Title V for single HAP, total HAPs and VOCs (includes administrative modifications to correct errors made in potential-to-emit calculations, to remove voluntary limitations of 128 lb/day and 20 tpy OC emissions per spray booth that were mistakenly identified as BAT, replace voluntary facility-wide restriction of 35 tpy OC with synthetic minor restriction of 99.0 tpy for VOC, expand rule-based VOC content limitations to include qualifying clear coatings, zinc rich primers and extreme performance coatings and combines K001 and K002 into a single EU group).
Permit Type: Renewal
Permit Fee: $0.00*DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 5/28/2015
Effective Date: To be entered upon final issuance
Expiration Date: To be entered upon final issuance
Permit Evaluation Report (PER) Annual Date: To be entered upon final issuance

This document constitutes issuance to:

SRT Sales and Service
4936 Southway St. SW
Canton, OH 44706

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544
(330)489-3385

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and Federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler
Director

Authorization (continued)

Permit Number: P0110589
Permit Description: FEPTIO renewal permit for miscellaneous metal parts coating lines K001 and K002, with synthetic minor restrictions to avoid Title V for single HAP, total HAPs and VOCs (includes administrative modifications to correct errors made in potential-to-emit calculations, to remove voluntary limitations of 128 lb/day and 20 tpy OC emissions per spray booth that were mistakenly identified as BAT, replace voluntary facility-wide restriction of 35 tpy OC with synthetic minor restriction of 99.0 tpy for VOC, expand rule-based VOC content limitations to include qualifying clear coatings, zinc rich primers and extreme performance coatings and combines K001 and K002 into a single EU group).

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Group Name: Spray Booths

Emissions Unit ID:	**K001**
Company Equipment ID:	Spray Paint Booth #1
Superseded Permit Number:	15-1300
General Permit Category andType:	Not Applicable
Emissions Unit ID:	**K002**
Company Equipment ID:	Spray Paint Booth #2
Superseded Permit Number:	15-1300
General Permit Category andType:	Not Applicable

A. Standard Terms and Conditions

1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee.This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

Annual emissions fee.Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. For facilities that are permitted as synthetic minor sources, the fee schedule is adjusted annually for inflation. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions of this permit will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Canton City Health Department in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emission unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as beingpermanently shut down without first applying for and obtaining a permit pursuantto OAC Chapter 3745-31.

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.

B. Facility-Wide Terms and Conditions

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

   a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

      (1) 3. below (Definitions)

   b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

      (1) None.

2. The permittee is advised that this facility may be subject to the "Generally Available Control Technology" (GACT) requirements under 40 CFR Part 63, Subpart HHHHHH, the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources.* The U.S. EPA is responsible for the administration of the requirements of this rule at this time. It should be noted that the enforcement authority of the GACT requirements is not delegated to Ohio EPA at the time of this permit processing. This rule may be applicable to the following emissions unit(s) contained in this permit: K001 and K002.

   The complete requirements of this rule (including the Part 63 General Provisions) may be accessed via the Internet from the Electronic Code of Federal Regulations (e-CFR) website http://www.ecfr.gov/ or by contacting the Canton City Health Department, Air Pollution Control Division.

   *This facility may be subject to this rule if the facility is an area source (i.e. non-major source) of hazardous air pollutants (HAPs) and performs paint stripping using methylene chloride or spray application of coatings that contain compounds above a given concentration of the following target HAPs: chromium (Cr), lead (Pb), manganese (Mn), nickel (Ni), or Cadmium (Cd). Specifically, compounds of hexavalent chromium (Cr^{+6}), lead (Pb), nickel (Ni), or cadmium (Cd) qualify if any of these compounds comprises more than 0.1% by mass of the coating, as-applied; and compounds of trivalent chromium (Cr^{+3}) or manganese (Mn) qualify if any of these compounds comprises more than 1.0% by mass of the coating, as-applied.

3. Definitions as used in this permit:

   As-applied: the formulation of a coating during the application on, or impregnation into a substrate, including any dilution solvents or thinners (or other components) added at the source before application of the coating. [OAC rule 3745-21-01(D)]

   As-received: the formulation of a coating material or component (e.g., one-part coating, each component of two-part coatings, thinner, reducer, colorant, or other additive) as received from the supplier. As-received is equivalent to "as-supplied" and "as-purchased."

   Cleaning material: a solvent used to remove contaminants and other materials such as dirt, grease, oil, and dried (e.g., depainting) or wet coating from a substrate before or after coating application; or from equipment associated with a coating operation, such as spray booths, spray guns, tanks, and hangers.

Thus, it includes any cleaning material used on substrates or equipment or both. [OAC rule 3745-21-01(D)]

Clear coating: a colorless coating which contains binders, but no pigment, and is formulated to form a transparent film. [OAC rule 3745-21-01(D)]

Coating or surface coating: a material applied onto or saturated within a substrate for decorative, protective or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, adhesives and inks. [Adapted from OAC rule 3745-21-01(D)]

Coating line: an operation consisting of a series of one or more coating applicators and any associated flash-off areas, drying areas and ovens wherein a surface coating is applied, dried, and/or cured. It is not necessary for an operation to have an oven, or flash-off area, or drying area in order to be included within this definition. [OAC rule 3745-21-01(D)]

Excluding water and exempt solvents means subtracting the volume (or volume fraction) of water and other volatile materials which are not VOC (and thus are known as "exempt solvents") from the total volume of a coating material. [Adapted from OAC rule 3745-21-01(D)].

Exempt solvent: 1. volatile matter in a coating or cleaning material other than VOC or water. [OAC rule 3745-21-10(B)(5)] 2. any of the organic compounds that are specifically identified as exempt under the definition of "volatile organic compound" in paragraph (B)(16) of OAC rule 3745-21-01.

Extreme performance coating: For the surface coating of miscellaneous metal or plastic parts, a coating used on a metal or plastic surface where the coated surface is, in its intended use, subject to the following:

(i) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions; or

(ii) Repeated exposure to temperatures in excess of two hundred and fifty degrees Fahrenheit; or

(iii) Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents.

Extreme performance coatings include, but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, and heavy duty trucks. [OAC rule 3745-21-01(D)]

Hazardous air pollutant (HAP): any air pollutant listed under Section 112(b) of the Clean Air Act (USC Section 7412).

Miscellaneous metal part or product: any metal part or metal product *except* the following: cans, coils, metal furniture, large appliances, and aluminum or copper wire prior to its formation into an electromagnetic coil. [OAC rule 3745-21-01(D)]

One-part, or one-component coating: a coating that is ready for application as it comes out of its container to form an acceptable dry film. For the purpose of this definition, a thinner, necessary to reduce the viscosity, is not considered a component. [Adapted from OAC rule 3745-21-01(D)]

Organic compound (OC): any chemical compound containing carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, metallic carbonates, ammonium carbonate, methane (except methane from landfill gases), and ethane. [OAC rule 3745-21-01(B)]

Solids: all nonvolatile matter in a coating material. Percent solids + percent volatile matter = 100%.

Toxic air contaminant (TAC): an air contaminant that has been identified by the Ohio EPA as having known toxicological effects, pursuant to ORC 3704.03(F)(3)(c). The complete list of toxic air contaminants regulated in Ohio can be found in OAC rule 3745-114-01.

Transfer efficiency (TE): the percentage of total coating solids employed by a coating applicator which adheres to the object being coated. [OAC rule 3745-21-01(D)]

Two-part, or two-component coating: a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film. May also be known as a multi-component coating, especially if the as-applied mixture includes another additive material in addition to the catalyst or hardener.[Adapted from OAC rule 3745-21-01(D)]

Volatile matter: all non-solid matter in a coating material, including water. Percent solids + percent volatile matter = 100%.

Volatile organic compounds (VOC): a subset of organic compounds (OC) that participate in atmospheric photochemical reactions. Organic compounds that are specifically identified as *not* being "volatile organic compounds" are listed under the definition of "volatile organic compound" in paragraph (B)(16) of OAC rule 3745-21-01. When used in coating or cleaning materials, those compounds in the list just described are known as "exempt solvents."

Zinc rich primer coating: any coating which contains primarily zinc pigment on a weight basis, which is applied as a prime coat to a metal part or product prior to assembly, and which is dried at ambient or in-plant temperature. [OAC rule 3745-21-01(D)]

C. Emissions Unit Terms and Conditions

1. Emissions Unit Group - Spray Booths: K001,K002,

EU ID	Operations, Property and/or Equipment Description
K001	Paint Booth #1: Enclosed paint spray booth 20'W x 60'L x 16'H with 3.11 mmBtu/hr natural gas-fired heater designed to provide heated air at a maximum temp of 70 deg F above ambient (i.e., about 170 deg F max). The heater is used as needed to speed up flash-off & ensure proper film formation. Particulate emissions from paint overspray are controlled by a dry filter system.
K002	Paint Booth #2: Enclosed paint spray booth 20'W x 60'L x 16'H with 3.11 mmBtu/hr natural gas-fired heater designed to provide heated air at a maximum temp of 70 deg F above ambient (i.e., about 170 deg F max). The heater is used as needed to speed up flash-off & ensure proper film formation. Particulate emissions from paint overspray are controlled by a dry filter system.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. d)(9) – d)(12), and e)(4)a.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)a, d)(1), d)(2) and e)(3)

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(D) [Synthetic Minor restrictions to avoid Title V applicability]	Emissions of hazardous air pollutants (HAPs) shall not exceed 9.9 tons per year for any individual HAP and 24.9 tons per year for any combination of HAPs, both based upon a rolling, 12-month summation of the monthly emissions from coatings and cleaning materials employed in emissions units K001 and K002 combined.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Emissions of volatile organic compounds (VOC) shall not exceed 99.0tons per year based upon a rolling, 12-month summation of the monthly emissions from coatings and cleaning materials employed in emissions units K001 and K002 combined. See b)(2)c.
b.	OAC rule 3745-31-05(A)(3) [Administrative modification to Best Available Technology (BAT) established in PTI 15-1300 issued 08/27/1997]	Emissions of VOC shall comply with the requirements established pursuant to OAC rule 3745-21-09(U)(1). Emissions of PE/PM shall be controlled by the use of a fully enclosed spray booth and compliance with the requirements of OAC rule 3745-17-11(C). See c)(1) – c)(3) below.
c.	OAC rule 3745-21-09(U)(1)(a) - (d) [VOC emissions limitations for surface coating of miscellaneous metal parts and products]	See b)(2)a. below.
d.	OAC rule 3745-17-07(A) [Visible particulate emission limitations for stack emissions]	The limitations established pursuant to paragraph (A)(1) of this rule do not apply to this emissions unit because it qualifies for an exemption pursuant to paragraph (A)(3)(h) of this rule, specifically because it is not subject to any mass emission limitation under any of the rules listed therein. Specifically, one of the rules listed in 3745-17-07(A)(3)(h) is OAC rule 3745-17-11, but as a surface coating process, this emissions unit is subject to paragraph (C) instead of paragraph (B) of rule 3745-17-11, and paragraph (C) contains no mass emission limitations. See next row, b)(1)e.
e.	OAC rule 3745-17-11(C) [Restrictions on particulate emissions from industrial processes; requirements for surface coating processes]	See c)(2), c)(3), and d)(4) – d)(8) below.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	ORC 3704.03(F)(4) OAC rule 3745-114-01 [Toxic Air Contaminants]	See d)(9) – d)(12), and e)(4)a. below.

(2) Additional Terms and Conditions

a. Coatings employed in the coating operations shall not exceed the applicable VOC emission limitation[v,vi,vii] as defined for each of the following categories:

i. 3.5 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for any coating that is dried at temperatures not exceeding two hundred degrees Fahrenheit [OAC 3745-21-09(U)(1)(d)], except for coatings in the special categories listed in "ii" – "iv" below;

ii. 4.3 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for a clear coating[viii][OAC 3745-21-09(U)(1)(a)];

[Comment: Neither the rule cited nor the definition[viii] of a clear coating specifies a limitation for the drying temperature.]

iii. 4.0 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for a zinc rich primer coating[viii][OAC 3745-21-09(U)(1)(b)]; or

[Comment: Although the rule cited does not specify a limitation for the drying temperature, the definition[4] of a zinc rich primer coating states that it must be dried at "ambient or in-plant temperature." The permittee must comply with this operational restriction in order to qualify for this category.]

iv. 3.5 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for an extreme performance coating[viii][OAC 3745-21-09(U)(1)(c)].

[Comment: Neither the rule cited nor the definition[viii] of an extreme performance coating specifies a limitation for the drying temperature.]

The following information shall be used when determining compliance with the limitations listed in "i." - "iv." above:

v. In the context of OAC rule 3745-21-09(U)(1), "VOC emission limitation" and "VOC content limitation" mean the same thing.

vi. Pursuant to paragraph (B)(1) of OAC rule 3745-21-09, the VOC emissions limitations in "i" – "iv" above are based upon a weighted average by volume of all coating materials that are in the same category and employed in a single coating line in any one day, where "day" means a 24-hour calendar day. If each and every coating material in the same category that is employed in a given coating line in any one day complies with the applicable limitation in "i" – "iv" above, then by definition, the

weighted average by volume of all coating materials in that same category will also be in compliance. In that case, it shall not be necessary to calculate a weighted average by volume in order to demonstrate compliance.

vii. Pursuant to paragraph (U)(1) of OAC rule 3745-21-09, if a coating is subject to two or more limits (e.g., if it qualifies for two or more of the categories in "i" – "iv" above), the limit that is least restrictive shall apply.

viii. See Section B. of this permit, Facility-Wide Terms and Conditions, for definitions of *clear coatings*, *zinc rich primer coatings*, and *extreme performance coatings*.

b. The potential emissions of particulate matter (PE/PM), nitrogen oxides (NOx), sulfur dioxide (SO_2), and carbon monoxide (CO) associated with the combustion of natural gas in the heater for each booth are negligible (less than 10 lbs/day de minimis level), and therefore emissions limitations for these pollutants have not been established for these emissions units. The annual potential emissions of volatile organic compounds (VOC) associated with the combustion of natural gas in both heaters combined are also negligible (approx. 0.14 tpy), and therefore have not been included in the emissions limitation for VOC for these emissions units.

c. The only terms and conditions involving the combustion of natural gas are the Operational Restriction in c)(4) below and the associated monitoring, recordkeeping and reporting requirements.

c) Operational Restrictions

(1) Best available technology includes the requirement that the permittee shall conduct all spraying of coatings in a totally enclosed booth and comply with the requirements in (2) and (3) below.

(2) The permittee shall operate a dry filtration system for the control of particulate emissions for each of the emissions units in this group; i.e., K001 and K002, whenever the respective emissions unit is in operation, and shall maintain each dry particulate filter system in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s), with any modifications deemed necessary by the permittee.

(3) In the event the dry particulate filter system for emissions unit K001 or K002 is not operating in accordance with the manufacturer's recommendations, instructions, and/or operating manual, with any modifications deemed necessary by the permittee, the dry particulate filter system shall be expeditiously repaired or otherwise returned to these documented operating conditions.

(4) The permittee shall fire only natural gas as fuel in heaters servicing emissions units K001 and K002.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record the following information each month* for all materials containing any hazardous air pollutant (HAP) and/or volatile organic compound (VOC)** that are employed in emissions unit K001 or K002. For coating materials, the permittee shall use either the "Coating As-Applied Option" in d)(1)a. below or the "Inventory Option" in d)(1)b. below. For cleaning materials, the permittee shall use the method in d)(1)c.

* It may be more convenient to keep the records required in d)(1)a. – d)(1)c. on a daily basis, but the minimum required frequency is monthly, which corresponds to the requirements in d)(2) below to record a monthly summary of individual HAP, total HAP, and total VOC emissions, and to update the rolling 12-month summations for each of these three pollutant categories.

** See g)(5) below, under Miscellaneous Requirements, for recommended additional recordkeeping for emissions of total organic compounds (OCs), i.e., OCs = VOCs plus exempt solvents.

a. Coating As-Applied Option:
This option requires monthly records to be kept on the amount, in gallons, of each coating or coating mixture "as-applied." For this option, the information does not have to be kept on a line-by-line basis, i.e., it does not have to be kept for emissions units K001 and K002 separately, although the permittee may choose to do so. If choosing this option, the permittee shall collect and record the following information each month:

i. the name and/or identification number of each coating-related material employed, as-received from the supplier (examples include one-part coatings, each component of two-part coatings, thinners, reducers, and other additives);

ii. for each coating that is not applied in the as-received condition (e.g., two-part coatings or coatings to which a thinner, reducer, or any other additive is added prior to being applied), the volumetric fraction of each material in the coating mixture as-applied. Also, the name and/or identification number of each coating mixture as-applied, if the as-applied mixture is uniquely identified by the permittee;

iii. the name and CAS No., if applicable, of each individual hazardous air pollutant (HAP) contained in each material identified in "i" above;

iv. the content, in pounds per gallon, of each individual HAP in each coating as-applied, calculated in accordance with the procedure described for C_{HAP} or $(C_{HAP})_{MIX}$, whichever is applicable, in g)(1) below, under Miscellaneous Requirements;

v. the actual VOC content, in pounds per gallon, of each coating as-applied, calculated in accordance with the procedure described for $C_{VOC,1}$ or $(C_{VOC,1})_{MIX}$, whichever is applicable, in g)(2) below, under Miscellaneous Requirements;

vi. the volume, in gallons, of each coating as-applied during the month;

vii. the monthly emissions of each individual HAP, in pounds, for each coating as-applied, to be calculated by multiplying the content of each individual HAP in pounds per gallon from "iv" above by the volume applied from "vi" above;

viii. the monthly VOC emissions, in pounds, for each coating as-applied, to be calculated by multiplying the actual VOC content from "v" above by the volume applied from "vi" above;

ix. the total monthly emissions of each individual HAP, in pounds, from all coatings applied;

x. the total monthly emissions of all HAPs, in pounds, from all coatings applied; and

xi. the total monthly VOC emissions, in pounds, from all coatings applied.

b. Inventory Option:
As an alternative to the As-Applied Option in a. above, this option requires monthly records to be kept on the amount, in gallons, of each individual coating-related material employed, in its as-received condition (for cleaning materials, see c. below). For this option, the information does not have to be kept on a line-by-line basis, i.e., it does not have to be kept for emissions units K001 and K002 separately, although the permittee may choose to do so. If choosing this option, the permittee shall collect and record the following information each month:

i. the name and/or identification number of each coating-related material employed, as-received from the supplier (examples include one-part coatings, each component of two-part coatings, thinners, reducers, and other additives). If the manufacturer of a two-part coating only provides material content data for the two parts as-mixed, then the records required in "i" – "vii" shall be kept on the same as-mixed basis rather than for each of the two parts individually;

ii. the name and CAS No., if applicable, of each individual hazardous air pollutant (HAP) contained in each material identified in "i" above;

iii. the content, in pounds per gallon, of each individual HAP in each material identified in "i" above, calculated in accordance with the procedure described for C_{HAP} in g)(1) below, under Miscellaneous Requirements;

iv. the actual VOC content, in pounds per gallon, of each material identified in "i" above, calculated in accordance with the procedure described for $C_{VOC,1}$ in g)(2) below, under Miscellaneous Requirements;

v. the volume, in gallons, of each material identified in "i" above that is employed during the month;

vi. the monthly emissions of each individual HAP, in pounds, for each material identified in "i" above, to be calculated by multiplying the content of each individual HAP in pounds per gallon from "iii" above by the volume employed from "v" above;

vii. the monthly VOC emissions, in pounds, for each material identified in "i" above, to be calculated by multiplying the actual VOC content from "iv" above by the volume employed from "v" above;

viii. the total monthly emissions of each individual HAP, in pounds, from all coating-related materials employed;

ix. the total monthly emissions of all HAPs, in pounds, from all coating-related materials employed; and

x. the total monthly VOC emissions, in pounds, from all coating-related materials employed.

c. Cleaning Materials:
The method for cleaning materials is nearly identical to the Inventory Option for coating materials in b. above, but is provided as a separate section for clarity. The information for cleaning materials does not have to be kept on a line-by-line basis, i.e., it does not have to be kept for emissions units K001 and K002 separately, although the permittee may choose to do so. The permittee shall collect and record the following information each month:

i. the name and/or identification number of each cleaning material employed;

ii. the name and CAS No., if applicable, of each individual hazardous air pollutant (HAP) contained in each cleaning material identified in "i" above;

iii. the content, in pounds per gallon, of each individual HAP in each cleaning material identified in "i" above, calculated in accordance with the procedure described for C_{HAP} in g)(1) below, under Miscellaneous Requirements;

iv. the actual VOC content, in pounds per gallon, of each cleaning material identified in "i" above, calculated in accordance with the procedure described for $C_{VOC,1}$ in g)(2) below, under Miscellaneous Requirements;

v. the net volume, in gallons, of each cleaning material identified in "i" above that is employed during the month, where net volume means the amount that is lost through evaporation; i.e., the gross number of gallons used minus the number of gallons recovered and/or sent off-site for disposal during the month*;

vi. the monthly emissions of each individual HAP, in pounds, for each cleaning material identified in "i" above, to be calculated by multiplying the

content of each individual HAP in pounds per gallon from "ii" above by the net volume employed from "v" above;

vii. the monthly emissions of all HAPs, in pounds, for each cleaning material identified in "i" above;

viii. the monthly VOC emissions, in pounds, from each cleaning material identified in "i" above, to be calculated by multiplying the actual VOC content from "iv" above by the net volume employed from "v" above;

ix. (if more than one cleaning material is employed during the month), the total monthly emissions of each individual HAP, in pounds, from all cleaning materials employed;

x. (if more than one cleaning material is employed during the month), the total monthly emissions of all HAPs, in pounds, from all cleaning materials employed; and

xi. (if more than one cleaning material is employed during the month), the total monthly VOC emissions, in pounds, from all cleaning materials employed.

* A daily log may be required for recovered waste cleaning materials in situations where a record of the monthly total volume or weight of the collected material cannot be accurately maintained. This amount shall be adjusted if the volume or weight shipped is less than the sum of the monthly recovered material added to the container.

(2) For emissions units K001 and K002 combined, the permittee shall maintain monthly records of HAP and VOC emissions from coatings and cleaning materials combined by computing and recording the following information:

a. the total monthly emissions of each individual HAP, in pounds, from all coatings applied and all cleaning materials employed; i.e., for each individual HAP, the total monthly emissions from coating materials (from either d)(1)a.ix., "Coating As-Applied Option," or d)(1)b.viii., "Inventory Option") plus the total monthly emissions from cleaning materials as recorded in d)(1)c.vi. or d)(1)c.ix.;

b. the total monthly emissions of all HAPs, in pounds, from all coatings applied and all cleaning materials employed; i.e., the total monthly emissions of all HAPs from coating materials (from either d)(1)a.x., "Coating As-Applied Option," or d)(1)b.ix., "Inventory Option") plus the total monthly emissions of all HAPs from cleaning materials as recorded in d)(1)c.vii. or d)(1)c.x. [alternatively, the total monthly emissions of all HAPs from all coatings applied and all cleaning materials employed can be calculated as the summation of the monthly total for each individual HAP from "a" above];

c. the total monthly VOC emissions, in pounds, from all coatings applied and all cleaning materials employed, i.e., the total monthly VOC emissions from coating materials (from either d)(1)a.xi., "Coating As-Applied Option," or d)(1)b.x., "Inventory Option") plus the total monthly VOC emissions from cleaning materials as recorded in d)(1)c.viii. or d)(1)c.xi.;

d. the rolling, 12-month summation of emissions of each individual HAP, in tons; i.e., the summation of the monthly emissions of each individual HAP from "a" above for the most recent month and the previous 11 months, divided by 2000 lb/ton;

e. the rolling, 12-month summation of all HAP emissions combined, in tons; i.e., the summation of the monthly emissions of all HAPs combined from "b" above for the most recent month and the previous 11 months, divided by 2000 lb/ton; and

f. the rolling, 12-month summation of VOC emissions, in tons; i.e., the summation of the monthly VOC emissions from "c" above for the most recent month and the previous 11 months, divided by 2000 lb/ton.

Emissions units K001 and K002 have been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of the monthly emissions upon issuance of this permit.

(3) In order to demonstrate the ongoing status of compliance with the coating VOC emission limitations in b)(2)a. above, the permittee shall collect and record the information required either by the Compliant Coatings Option in "a." below or by the Daily Volume-Weighted Average Option in "b." below.

a. Compliant Coatings Option: If the permittee elects to use only complying coatings (i.e., each coating complies with the applicable emission limitation, as applied), the permittee shall collect and record the following information each day:

i. the name and/or identification number of each coating-related material employed, as-received from the supplier (examples include one-part coatings, each component of two-part coatings, thinners, reducers, and other additives, but not cleaning materials);

ii. for each coating that is not applied in the as-received condition (e.g., two-part coatings or coatings to which a thinner, reducer, or any other additive is added prior to being applied), the volumetric fraction of each material in the coating mixture as-applied. Also, the name and/or identification number of each coating mixture as-applied, if the as-applied mixture is uniquely identified by the permittee;

iii. the identification of the type of coating from among the following categories:

(a) general coating; (this category may be used for any coating that is dried at temperatures not exceeding two hundred degrees Fahrenheit, provided it does not exceed the applicable limit of 3.5 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied);

(b) clear coating;

(c) zinc rich primer coating; or

(d) extreme performance coating;

See Section B. of this permit, Facility-Wide Terms and Conditions, for definitions of *clear coatings*, *zinc rich primer coatings*, and *extreme performance coatings*.

iv. the VOC content, in pounds per gallon of coating, excluding the volume of water and exempt solvents, of each coating as applied, calculated in accordance with the procedure described for $C_{VOC,2}$ or $(C_{VOC,2})_{MIX}$, whichever is applicable, in g)(3) below, under Miscellaneous Requirements.

The information required in i. – iv. above does not have to be kept on a line-by-line basis, i.e., it does not have to be kept for emissions units K001 and K002 separately, although the permittee may choose to do so. Also, if complying coatings are mixed together at the coating line, it is not necessary to record the VOC content of the resulting mixture.

b. The Daily Volume-Weighted Average Option: The permittee shall use this method on all days when one or more of the coatings employed in emissions unit K001 or K002 exceeds the applicable category-based VOC content limitation listed in b)(2)a.i. – b)(2)a.iv. above. On all other days, the permittee may choose to use the Compliant Coatings Method in a. above instead. A "day" is defined as a 24-hour calendar day.

Further, this method is applicable only for coatings employed in the same emissions unit during the same day. In other words, averaging across both emissions units K001 and K002 is prohibited when using the Daily Volume-Weighted Option to demonstrate compliance. Therefore, on those days where this method is required for only one emissions unit, the permittee may choose to use the Compliant Coatings Method for the other emissions unit.

On each day when the daily volume-weighted average method is used to demonstrate compliance, the permittee shall collect and record the following information on an individual emissions unit basis:

i. the name and/or identification number of each coating-related material employed, as-received from the supplier (examples include one-part coatings, each component of two-part coatings, thinners, reducers, and other additives, but not cleaning materials)

ii. for each coating that is not applied in the as-received condition (e.g., two-part coatings or coatings to which a thinner, reducer, or any other additive is added prior to being applied), the volumetric fraction of each material in the coating mixture as-applied. Also, the name and/or identification

number of each coating mixture as-applied, if the as-applied mixture is uniquely identified by the permittee;

iii. the identification of the type of coating from among the following categories:

(a) general coating; (for the purpose of calculating a daily volume-weighted average, the permittee may choose to consider all coatings employed in the same emissions unit during the same day to be in the "general coating" category, provided all of these coatings are dried at temperatures not exceeding two hundred degrees Fahrenheit. If the permittee chooses this approach, the applicable VOC content limit is 3.5 pounds of VOC per gallon of coating, excluding water and exempt solvents, pursuant to paragraph (U)(1)(d) of OAC rule 3745-21-09, which is the lowest allowable limit);

(b) clear coating;

(c) zinc rich primer coating;

(d) extreme performance coating;

See Section B. of this permit, Facility-Wide Terms and Conditions, for definitions of *clear coatings*, *zinc rich primer coatings*, and *extreme performance coatings*.

iv. the volume, in gallons, of each coating as-applied during the day; and

v. the daily volume-weighted average VOC content, in pounds per gallon of coating, excluding the volume of water and exempt solvents, of all coatings applied, calculated in accordance with the procedure described for $(C_{VOC,2})_A$, in g)(4) below, under Miscellaneous Requirements.

(4) The permittee shall maintain documentation of the manufacturer's recommendations, instructions, or operating manuals for each dry particulate filter system, along with documentation of any modifications deemed necessary by the permittee.

(5) The permittee shall conduct periodic inspections of each dry particulate filter system to determine whether it is operating in accordance with the manufacturer's recommendations, instructions, or operating manuals, with any modifications deemed necessary by the permittee. These inspections shall be performed at a frequency that shall be based upon the recommendation of the manufacturer, and the permittee shall maintain a copy of the manufacturer's recommended inspection frequency.

(6) In addition to the recommended periodic inspections described in (5) above, not less than once each calendar year the permittee shall conduct a comprehensive inspection of each dry particulate filter system while the emissions unit is shut down and perform any needed maintenance and repair to ensure it is able to routinely operate in accordance with the manufacturer's recommendations.

(7) The permittee shall document each inspection (periodic and annual) of each dry particulate filter system and shall maintain the following information:

a. the date of the inspection;
b. a description of each/any problem identified and the date it was corrected;
c. a description of any maintenance and repairs performed; and
d. the name of person who performed the inspection.

(8) The permittee shall maintain records that document any time periods when either dry particulate filter system was not in service when its respective emissions unit was in operation, or was not operated in accordance with the manufacturer's recommendations, instructions, and/or operating manual, with any modifications deemed necessary by the permittee, when the emissions unit was in operation.

(9) The PTIO application for emissions units K001 and K002 was evaluated based on the actual materials and the design parameters of each emissions unit's exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute," ORC 3704.03(F)(4), was applied to these emissions units operating simultaneously for each toxic air contaminant (TAC) listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each TAC emitted at over one ton per year for emissions units K001 and K002 combined using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground level concentration result from the approved air dispersion model, was compared to the Maximum Acceptable Ground Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A," as follows:

a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic air contaminant emitted from emissions units K001 and K002 combined, (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices;" or

ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices;" the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

b. The TLV was divided by ten to adjust the standard from the working population to the general public (TLV/10).

c. This standard was then adjusted to account for the duration of the exposure or the maximum potential operating hours of the emissions units, i.e., 24 hours per day and 7 days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground Level Concentration (MAGLC):

$$(TLV/10) \times (8/24) \times (5/7) = (4)(TLV)/(24)(7) = TLV/42 = MAGLC$$

d. The following summarizes the results of dispersion modeling for the "worst case" toxic air contaminant from among the significant toxic air contaminants that were evaluated, with "significant" being defined in Engineering Guide No. 69 (Ohio EPA DAPC) as having potential emissions of 1 or more tons/year*:

Toxic Contaminant: ethyl benzene (CAS No. 100-41-4)

TLV (mg/m^3): 86.8

Max. Hourly Emission Rate (lb/hr): 22.6**

Predicted 1-Hour Maximum Ground Level Concentration ($\mu g/m^3$): 705

MAGLC ($\mu g/m^3$): 2067

705 $\mu g/m^3$ / 2067 $\mu g/m^3$ = 0.34 or 34%

* Based on PTIO application No. A0045271, received 8/2/2012, and confirmed by updated coating usage information provided by the permittee in December 2014 and January 2015, xylene, ethyl benzene, toluene, and MIBK each have potential emissions of 1 or more tons/year. Among these, xylene and ethyl benzene are the two most prevalent toxic air contaminants (TACs) in the coatings used at this facility. Ethyl benzene represents the "worst case" because it has a lower threshold limit value (TLV): 86.8 mg/m^3 for ethyl benzene compared to 439.19 mg/m^3 for xylene.

[Comment: Prior to 2010, the TLV was 439.19 mg/m^3 for both xylene and ethyl benzene. This was converted from the published value of 100 ppm by multiplying by MW of 106.16 (same for both compounds), then dividing by 24.45. In 2010, the TLV for ethyl benzene was lowered to 20 ppm, which converts to 86.8 mg/m^3.]

**22.6 lb/hr was the maximum hourly emission rate used in the modeling submitted with the PTIO application No. A0045271, received 8/2/2012. The numerical value of this emissions rate was based on a highly conservative maximum coating usage rate of 155 gal/day for EUs K001 and K002 combined, and another conservative assumption that all VOC in the coatings applied during one day was composed of a single TAC at the rate of 3.5 lb_{VOC}/gal. This was then divided by 24 hr/day, resulting in 22.6 lb/hr.

The permittee has demonstrated that emissions of the "worst case" toxic air contaminant, ethyl benzene, from emissions units K001 and K002 combined are calculated to be less than 80% of the Maximum Acceptable Ground Level Concentration (MAGLC). Any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute," ORC 3704.03(F)(4).

(10) Prior to making any physical changes to or changes in the method of operation of emissions unit K001 and/or K002 that could impact the parameters or values that were used in the predicted 1-hour maximum ground level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground level concentration include, but are not limited to, the following:

a. changes in the composition of the materials used or the use of new materials that would result in the emission of a new toxic air contaminant with a lower threshold limit value (TLV) than the lowest TLV previously modeled;

b. changes in the composition of the materials, or use of new materials that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01 that was modeled from the initial (or last) application; and

c. physical changes to K001 and/or K002 or its/their exhaust parameters (e.g., increased/decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the “Toxic Air Contaminant Statute” will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the “Toxic Air Contaminant Statute,” ORC 3704.03(F)(4), has been documented. If the change(s) meet(s) the definition of a “modification,” the permittee shall apply for and obtain a final FEPTIO prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

(11) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the “Toxic Air Contaminant Statute,” ORC 3704.03(F)(4):

a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic air contaminants emitted, change in stack/exhaust parameters, etc.);

b. the maximum acceptable ground level concentration (MAGLC) for each significant toxic air contaminant or the worst-case contaminant, calculated in accordance with the “Toxic Air Contaminant Statute,” ORC 3704.03(F)(4);

c. a copy of the computer model run(s) that established the predicted 1-hour maximum ground level concentration that demonstrated the emissions unit(s) to be in compliance with the “Toxic Air Contaminant Statute,” ORC 3704.03(F)(4), initially and for each change that requires reevaluation of the toxic air contaminant emissions; and

d. the documentation of the initial evaluation of compliance with the "Toxic Air Contaminant Statute," ORC 3704.03(F)(4), and documentation of any determination that was conducted to reevaluate compliance due to a change made to the emissions unit(s) or the materials applied.

(12) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model that was used to demonstrate compliance with the "Toxic Air Contaminant Statute," ORC 3704.03(F)(4), through the predicted 1-hour maximum ground level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

(13) For each day during which the permittee burns a fuel other than natural gas in the heaters servicing emissions units K001 and K002, the permittee shall maintain a record of the type and quantity of fuel burned.

e) Reporting Requirements

(1) All applications, notifications or reports required by terms and conditions in this permit to be submitted or reported "in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services").

Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the District Office or Local Air Agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the signatory authority may be represented as provided through procedures established in Air Services.

(2) The permittee shall notify the Canton City Health Department, Air Pollution Control Division in writing of any daily record from d)(3)b.v. above showing that the daily volume-weighted average VOC content exceeds the applicable limitation. The notification shall include a copy of each such daily record and shall be submitted within 45 days after the exceedance occurs. [OAC rule 3745-21-09(B)(3)(i)]

(3) The permittee shall submit quarterly deviation (excursion) reports that identify:

a. all deviations (excursions) of the following emissions limitations, operational restrictions and/or control device operating parameter limitations that restrict the potential to emit (PTE) of any regulated air pollutant and have been detected by the monitoring, record keeping and/or testing requirements in this permit:

i. all exceedances of the rolling, 12-month individual HAP emissions limitation of 9.9 tons as recorded in d)(2)d. above for each HAP for all the

coatings and cleaning materials employed in emissions units K001 and K002 combined;

ii. all exceedances of the rolling, 12-month total combined HAPs emissions limitation of 24.9 tons as recorded in d)(2)e. above for all the coatings and cleaning materials employed in emissions units K001 and K002 combined; and

iii. all exceedances of the rolling, 12-month total VOC emissions limitation of 99.0 tons as recorded in d)(2)f. above for all the coatings and cleaning materials employed in emissions units K001 and K002 combined;

b. the probable cause of each deviation (excursion);

c. any corrective actions that were taken to remedy the deviations (excursions) or prevent future deviations (excursions); and

d. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during a calendar quarter, the permittee shall submit a report that states that no deviations (excursions) occurred during the quarter.

The quarterly reports shall be submitted, electronically through Ohio EPA Air Services, each year by January 31 (covering October to December), April 30 (covering January to March), July 31 (covering April to June), and October 31 (covering July to September), unless an alternative schedule has been established and approved by the Canton City Health Department, Air Pollution Control Division.

(4) The permittee shall submit an annual Permit Evaluation Report (PER) to the Ohio EPA by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than twelve-months for each air contaminant source identified in this permit.

The permittee shall also provide the following information in the annual PER:

~~a.~~ as recorded in d)(8) above, any time periods when either dry particulate filter system was not in service when its respective emissions unit was in operation, or was not operated in accordance with the manufacturer's recommendations, instructions, and/or operating manual, with any modifications deemed necessary by the permittee, when the emissions unit was in operation;

b. as recorded in d)(12) above, any changes made to a parameter or value used in the dispersion model that was used to demonstrate compliance with the" Toxic Air Contaminant Statute," ORC 3704.03(F)(4), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions, the emissions unit(s), or the exhaust stack(s) have been made, then the report shall include an affirmative statement to this effect; and

c. as recorded in d)(13) above, all days during which a fuel other than natural gas was burned in the heaters servicing emissions units K001 and K002, and the type and quantity of fuel burned on those days.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

Coatings employed in the coating operations shall not exceed the applicable VOC emission limitation as defined for each of the following categories:

i. 3.5 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for any coating that is dried at temperatures not exceeding two hundred degrees Fahrenheit, except for coatings in the special categories listed in "ii" – "iv" below;

ii. 4.3 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for a clear coating;

[Comment: Neither the applicable rule for this VOC content limitation nor the definition of a clear coating specifies a limitation for the drying temperature.]

iii. 4.0 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for a zinc rich primer coating; or

[Comment: Although the applicable rule for this VOC content limitation does not specify a limitation for the drying temperature, the definition of a zinc rich primer coating states that it must be dried at "ambient or in-plant temperature." The permittee must comply with this operational restriction in order to qualify for this category.]

iv. 3.5 pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, for an extreme performance coating.

[Comment: Neither the applicable rule for this VOC content limitation nor the definition of a clear coating specifies a limitation for the drying temperature.]

See b)(2)a. above for additional information regarding the above limitations.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in d)(3)a. (Compliant Coatings Option) or d)(3)b. (Daily Volume-Weighted Average Option) above, whichever is applicable.

b. Emissions Limitation:

Emissions of hazardous air pollutants (HAPs) shall not exceed 9.9 tons per year for any individual HAP and 24.9 tons per year for any combination of HAPs, both

based upon a rolling, 12-month summation of the monthly emissions from coatings and cleaning materials employed in emissions units K001 and K002 combined.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in d)(1) – d)(2) above.

The individual HAP emission limitation was set equal to a normal synthetic minor emission limitation of 9.9 tons per year since the facility's potential to emit was more than the Title V threshold of 10 tons per year. The total HAP emission limitation was set equal to a normal synthetic minor emission limitation of 24.9 tons per year since the facility's potential to emit was more than the Title V threshold of 25 tons per year.

c. Emission Limitation:

Emissions of volatile organic compounds (VOC) shall not exceed 99.0tons per year based upon a rolling, 12-month summation of the monthly emissions from coatings and cleaning materials employed in emissions units K001 and K002 combined.

Applicable Compliance Method:

Compliance shall be determined based on the recordkeeping specified in d)(1) – d)(2) above.

The total VOC emission limitation was set equal to a normal synthetic minor emission limitation of 99.0 tons per year since the facility's potential to emit was more than the Title V threshold of 100 tons per year.

g) Miscellaneous Requirements

Values for material properties required in (1) – (4) below shall be determined either by the procedures set forth in U.S. EPA Method 24* or from formulation data provided by the manufacturer of the material, except for individual HAP, individual TAC, and exempt solvents information that can *only* be obtained from formulation data.

* Method 24, as described in 40 CFR Part 60, Appendix A, is applicable for the determination of volatile matter content, water content, density, volume solids, and weight solids of paint, varnish, lacquer, or other related surface coatings.

(1) The following method shall be used to calculate the content, in pounds per gallon, of each individual Hazardous Air Pollutant (HAP) or the total HAPs in any liquid material:

$C_{HAP} = (D)(W_{HAP})$ *See Notes 1. and 2. below*

where:

D = the overall density of the material, in pounds per gallon.

W_{HAP} = the weight fraction of the individual HAP in the material or the weight fraction of total HAPs in the material, depending upon the purpose of the calculation (i.e., individual HAP or total HAPs content).

Notes for g)(1):

1. For coatings, if the "as-applied" value is required for C_{HAP}, this will be the same as the "as-received" value only for the case of one-part coatings that are applied without the addition of any thinner, reducer or other additive. For all other cases, see Note 2.

2. For one-part coatings that are thinned or reduced before application (including dilution with water), and for all two-part coatings (which may also include thinners, reducers or other additives), the "as-applied" value for C_{HAP} must be calculated as a volume-weighted average for the coating mixture, in which case the applicable parameter shall be identified as $(C_{HAP})_{MIX}$. The following formula shall be used to calculate $(C_{HAP})_{MIX}$:

$$(C_{HAP})_{MIX} = \sum_{i=1}^{n} (V_i)\,(C_{HAP,i})$$

where:

i = subscript denoting a specific material in the coating mixture.

n = the total number of different materials in the coating mixture.

V_i = the volume fraction of each material "i" in the coating mixture, based on the volumetric mix ratio.

(2) The following method shall be used to calculate the actual VOC content ($C_{VOC,1}$), in pounds per gallon, of any liquid material:

$C_{VOC,1} = (D)(W_{VOC})$ *See Notes 1. and 2. below*

where:

D = the overall density of the material, in pounds per gallon.

W_{VOC} = the weight fraction of VOC in the material, in pounds of VOC per pound of material

$= W_{VM} - W_W - W_{ES}$

where:

W_{VM} = the weight fraction of volatile matter in the material, in pounds of volatile matter per pound of material.

[For coatings, if this weight fraction is determined by ASTM D2369-04, "Standard Test Method for Volatile Content of Coatings," the drying

conditions shall be one hundred ten degrees Celsius for one hour, except where otherwise authorized by the director based on an alternate analytical procedure that is satisfactorily demonstrated to the director by the coating manufacturer to be more representative of the actual cure mechanism of the coating].

W_W = the weight fraction of water in the material, in pounds of water per pound of material.

W_{ES} = the weight fraction of exempt solvent(s) in the material, in pounds of exempt solvent(s) per pound of material.

Notes for g)(2):

1. For coatings, if the "as-applied" value is required for $C_{VOC,1}$, this will be the same as the "as-received" value only for the case of one-part coatings that are applied without the addition of any thinner, reducer or other additive. For all other cases, see Note 2.

2. For one-part coatings that are thinned or reduced before application (including dilution with water), and for all two-part coatings (which may also include thinners, reducers or other additives), the "as-applied" value for $C_{VOC,1}$ must be calculated as a volume-weighted average for the coating mixture, in which case the applicable parameter shall be identified as $(C_{VOC,1})_{MIX}$. The following formula shall be used to calculate $(C_{VOC,1})_{MIX}$:

$$(C_{VOC,1})_{MIX} = \sum_{i=1}^{n} (V_i)\,(C_{VOC,1i})$$

where:

i = subscript denoting a specific material in the coating mixture.

n = the total number of different materials in the coating mixture.

V_i = the volume fraction of each material "i" in the coating mixture, based on the volumetric mix ratio.

(3) The following method shall be used to calculate the VOC content of each coating in pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied. This value is defined as $C_{VOC,2}$ in OAC rule 3745-21-10. Either of the following two options may be used to calculate $C_{VOC,2}$:

Option 1

$C_{VOC,2} = (D_C)(W_{VOC}) / (V_S + V_{VOC})$ *See Notes 1. and 2. below*

Option 2

$C_{VOC,2} = C_{VOC,1} / (1 - V_W - V_{ES})$ *See Notes 1. and 2. below*

Option 2 was derived from Option 1 by making the following substitutions: In the numerator, $(D_C)(W_{VOC})$ was replaced by $C_{VOC,1}$ because, by definition, $C_{VOC,1} = (D_C)(W_{VOC})$. In the denominator, $(V_S + V_{VOC})$ was replaced by $(1 - V_W - V_{ES})$ because for any coating-related material, $V_S + V_{VOC} + V_W + V_{ES} = 1$, so by rearrangement, $(V_S + V_{VOC}) = (1 - V_W - V_{ES})$.

Comment: Option 2 is more intuitive than Option 1 because it corresponds directly to the definition for $C_{VOC,2}$ as "pounds of VOC per gallon of coating excluding water and exempt solvents."

For both Options 1 and 2 above:

D_C = the overall density of the coating, in pounds per gallon.

$W_{VOC} = W_{VM} - W_W - W_{ES}$

= the weight fraction of VOC in the coating, in pounds of VOC per pound of coating.

where:

W_{VM} = the weight fraction of volatile matter in the coating, in pounds of volatile matter per pound of coating.

[For coatings, if this weight fraction is determined by ASTM D2369-04, "Standard Test Method for Volatile Content of Coatings," the drying conditions shall be one hundred ten degrees Celsius for one hour, except where otherwise authorized by the director based on an alternate analytical procedure that is satisfactorily demonstrated to the director by the coating manufacturer to be more representative of the actual cure mechanism of the coating.]

W_W = the weight fraction of water in the coating, in pounds of water per pound of coating.

W_{ES} = the weight fraction of exempt solvents in the coating, in pounds of exempt solvents per pound of coating.

V_S= the volume fraction of solids in the coating, in gallons of solids per gallon of coating.

$V_{VOC} = V_{VM} - V_W - V_{ES}$

= the volume fraction of VOC in the coating, in gallons VOC per gallon of coating.

where:

V_{VM} = the volume fraction of volatile matter in the coating, in gallons of volatile matter per gallon of coating.

V_W = the volume fraction of water in the coating, in gallons of water per gallon of coating.

V_{ES} = the volume fraction of exempt solvents in the coating, in gallons of exempt solvents per gallon of coating.

Notes for g)(3):

1. For one-part coatings, if the coating is applied as-received without the addition of any thinner, reducer, or other additive, then the as-applied value for $C_{VOC,2}$ is the same as the as-received value. For all other cases, see Note 2.

2. For one-part coatings that are thinned or reduced before application (including dilution with water), and for all two-part coatings (which may also include thinners, reducers or other additives), the as-applied value for $C_{VOC,2}$ must be calculated for the coating mixture. Any of following *three* options may be used to calculate $(C_{VOC,2})_{MIX}$:

   $(C_{VOC,2})_{MIX}$ Option 1

   $$(C_{VOC,2})_{MIX} = \sum_{i=1}^{n} (V_i)\,(C_{VOC,2i})\,(V_{Si} + V_{VOCi}) \;/\; \sum_{i=1}^{n} (V_i)\,(V_{Si} + V_{VOCi})$$

   $(C_{VOC,2})_{MIX}$ Option 2

   $$(C_{VOC,2})_{MIX} = \sum_{i=1}^{n} (V_i)\,(C_{VOC,1i}) \;/\; \sum_{i=1}^{n} (V_i)\,(1 - V_{Wi} - V_{ESi})$$

   Option 2 was derived from Option 1 by making the following substitutions: In the numerator, $(C_{VOC,2i})$ was replaced by $(C_{VOC,1i}) / (V_{Si} + V_{VOCi})$ based on the formulas for $C_{VOC,1}$ and $C_{VOC,2}$ in OAC rule 3745-21-10. There were then two $(V_{Si} + V_{VOCi})$ terms in the numerator that cancelled each other out, leaving just $(V_i)\,(C_{VOC,1i})$. In the denominator, the $(V_{Si} + V_{VOCi})$ term was replaced by $(1 - V_{Wi} - V_{ESi})$, because for any coating-related material "i", $V_{Si} + V_{VOCi} + V_{Wi} + V_{ESi} = 1$, so by rearrangement, $(V_{Si} + V_{VOCi}) = (1 - V_{Wi} - V_{ESi})$.

   $(C_{VOC,2})_{MIX}$ Option 3

   $$(C_{VOC,2})_{MIX} = (C_{VOC,1})_{MIX} \;/\; \sum_{i=1}^{n} (V_i)\,(1 - V_{Wi} - V_{ESi})$$

   Option 3 was derived from Option 2 by making a simplifying substitution in the numerator based directly on the formula for $(C_{VOC,1})_{MIX}$ as shown in section g)(2) above.

   Comment: Option 3 may be more convenient than either Option 1 or 2 for calculating $(C_{VOC,2})_{MIX}$, because it is more intuitive and because the permittee is already required to calculate and record $(C_{VOC,1})_{MIX}$ for each coating mixture, as applied, as a separate requirement in this permit.

   For Options 1 – 3 above:

   i = subscript denoting a specific material in the coating mixture.

n = the total number of different materials in the coating mixture.

V_i = the volume fraction of each material "i" in the coating mixture, based on the volumetric mix ratio.

(4) The following method shall be used to calculate VOC content in pounds of VOC per gallon of coating, excluding water and exempt solvents, as applied, as a **daily volume-weighted average.** This method may be used to demonstrate compliance if more than one coating in the same category (i.e., subject to the same VOC content limitation) is employed in the same emissions unit during a 24-hour calendar day.

$(C_{VOC,2})$ as a volume-weighted average for any time period "t" is defined as $(C_{VOC,2})_A$ in OAC rule 3745-21-10. For the purpose of this permit, the only time period of interest is a 24-hour calendar day. Either of following two options may be used to calculate $(C_{VOC,2})_A$:

Option 1

$$(C_{VOC,2})_A = \sum_{i=1}^{n} (L_{Ci})(C_{VOC,2i})\,(V_{Si} + V_{VOCi}) \;/\; \sum_{i=1}^{n} (L_{Ci})\,(V_{Si} + V_{VOCi})$$

See Notes 1. and 2. below

Option 2

$$(C_{VOC,2})_A = \sum_{i=1}^{n} (L_{Ci})(C_{VOC,1i}) / \sum_{i=1}^{n} (L_{Ci})\,(1 - V_{Wi} - V_{ESi})$$

See Notes 1. and 2. below

Option 2 was derived from Option 1 by using the same substitutions as explained in g)(3) above for $(C_{VOC,2})_{MIX}$.

For both Options 1 and 2 above:

A = subscript denoting that the indicated VOC content is a volume-weighted average of multiple coatings employed during a specified time period. For the purpose of this permit, the only time period of interest is a 24-hour calendar day.

i = subscript denoting a specific coating employed during the 24-hr day.

n = the total number of coatings employed during the 24-hr day.

L_{Ci} = the liquid volume of coating "i" employed during the 24-hr day, in gallons.

Notes for g)(4):

1. For one-part coatings, if the coating is applied as-received without the addition of any thinner, reducer, or other additive, the as-applied value for each parameter ($C_{VOC,1}$, $C_{VOC,2}$,V_S, V_{VOC}, V_W and V_{ES}) is the same as the as-received value, and shall be calculated as described in g)(2) and g)(3) above. For all other cases, see Note 2.

2. For one-part coatings that are thinned or reduced before application (including dilution with water), and for all two-part coatings (which may also include thinners, reducers or other additives), the as-applied value must be calculated **for each parameter** needed in the daily volume-weighted average formula for $(C_{VOC,2})_A$ (either Option 1 or Option 2 above). In other words, for each coating mixture as described in this paragraph, a preliminary set of calculations based on the volume fraction of each material in the mixture must be completed in order to generate the input values needed to calculate $(C_{VOC,2})_A$.

   For example, if the permittee has chosen to calculate $(C_{VOC,2})_A$ using the formula in Option 1 above, $(C_{VOC,2i})_{MIX}$,$(V_{Si})_{MIX}$ and $(V_{VOCi})_{MIX}$, would be needed for each coating mixture "i."

   Or, if the permittee has chosen to calculate $(C_{VOC,2})_A$ using the formula in Option 2 above, $(C_{VOC,1i})_{MIX}$,$(V_{Wi})_{MIX}$ and $(V_{ESi})_{MIX}$ would be needed for each coating mixture "i."

   Parameters needed for coating mixtures shall be calculated as shown below:

   $(C_{VOC,1})_{MIX}$ shall be calculated as described in Note 2 under g)(2) above.

   $(C_{VOC,2})_{MIX}$ shall be calculated as described in Note 2 under g)(3) above.

$$(V_{VOC})_{MIX} = \sum_{j=1}^{n} (V_j)(V_{VOCj})$$

$$(V_S)_{MIX} = \sum_{j=1}^{n} (V_j)(V_{Sj})$$

$$(V_W)_{MIX} = \sum_{j=1}^{n} (V_j)(V_{Wj})$$

$$(V_{ES})_{MIX} = \sum_{j=1}^{n} (V_j)(V_{ESj})$$

   where:

   j = subscript denoting a specific material in the coating mixture.

   n = the total number of different materials in the coating mixture.

   Vj = the volume fraction of each material "j" in the coating mixture, based on the volumetric mix ratio.

(5) *Optional* additional recordkeeping recommended for total organic compounds (OCs).

Background:

As described in the Definitions in Section B. of this permit, Facility-Wide Terms and Conditions, paragraph 3), some materials contain *exempt solvents,* which are organic

compounds (OCs) that have been identified as being exempt from the definition of "VOC" for regulatory purposes because they do not participate in photochemical reactions (see the definitions for *exempt solvents, organic compounds* and *volatile organic compounds*). For a given liquid material, the total organic compound (OC) content equals the sum of the VOCs and any exempt solvents.

Only VOCs are included in the definition of "regulated air pollutant" in OAC rule 3745-77-01 for the purpose of Title V major source applicability; i.e., potential-to-emit of 100 tons per year. For this reason, the synthetic minor restrictions in b)(1)a. above include only emissions of VOCs rather than total OCs (in addition to single HAPs and total HAPs). Therefore, the monitoring and recordkeeping requirements necessary to demonstrate compliance with the synthetic minor restrictions (see d)(1) and d(2) above) include only VOCs.

OCs needed for annual Fee Emission Report:

As described in term A.4 of the Standard Terms and Conditions of this permit, there is a rule-based requirement in OAC Chapter 3745-78 for the permittee to report the actual emissions of total OCs on an annual calendar year basis for the purpose of emissions fees; i.e., the annual Fee Emission Report (FER). For this reason, it is highly recommended that the permittee maintain records of the total OC content and usage-based OC emissions for all OC-containing materials along with the recordkeeping required in this permit for all HAP-containing and VOC-containing materials. This may include the need to keep records for some organic materials that contain *only* exempt solvents (i.e., zero VOCs).