OhioEPA
Ohio Environmental Protection Agency
Division of Air Pollution Control

INTER-OFFICE COMMUNICATION

TO: Permit Writers and Permit Reviewers

FROM: Mike Hopkins, Assistant Chief, Permitting, DAPC

DATE: December 10, 2009

RE: BAT Requirements for Permit Applications Filed On or After August 3, 2009

As you are aware, Senate Bill (S.B.) 265 made changes to the methods we use to develop and implement our Best Available Technology (BAT) program.

On such change is the change associated with applications filed on or after August 3, 2009. Under S.B 265, the director is expected to develop rules that define BAT consistent with S.B. 265 for non-exempt sources (i.e., new or modified emissions units with criteria pollutant or criteria pollutant precursor emission limitations greater than 10 tons per year). Once effective, the director is to use the rules to determine BAT for these sources.

Ohio is currently working to develop a short-term and long-term set of rules that would implement S.B. 265. A short-term rule would define BAT on a case-by-case basis consistent with S.B. 265 provisions. Long-term rules would attempt to define BAT by category when possible. However, neither short-term nor long-term rules have been developed.

U.S. EPA has told Ohio EPA that issuing permits on or after August 3, 2009 without BAT would be considered by U.S. EPA as "backsliding" under the statutory provisions of the Clean Air Act and would not be acceptable.

Because neither short- nor long-term rules have been adopted, Ohio has decided to develop this policy that implements S.B. 265 requirements through case-by-base BAT procedures to avoid "backsliding" claims. This policy has been developed so all permit-writing staff knows how to establish BAT though the permits they write and so any interested party knows what to expect. This memo describes and implements that policy."

The following procedure shall be used to develop and determine BAT for non exempt sources[1].

1. Applicability of Post August 3, 2009 BAT

   Determine the date the installation or modification permit application was ***filed*** (not the completeness determination date). In this case, "modification" means a modification as

[1] Exempt sources include those that are exempt under OAC rule 3745-31-03 and those that are exempt from BAT under the <10 ton/yr exemption. This policy would not apply to deminimis sources because deminimis sources are not required to obtain installation permits.

defined in Chapter 31, not an administrative modification. Determine the date that construction or installation of the air contaminant source was started. If the application was filed prior to August 3, 2009, or the air contaminant source was constructed or modified (for this permit action) prior to August 3, 2009, then BAT for the new or modified air contaminant sources covered under the application shall be determined on a case-by-case basis using past practices for determining BAT. This includes utilizing the March 2008 Q & A guidance (http://www.epa.ohio.gov/dapc/S.B.265.aspx) that describes how S.B. 265 should be implemented. In that case, do not follow the below procedure. If the application was filed and the source was to be installed or modified on or after August 3, 2009, then proceed to the next step.

2. MACT, BACT, LAER Applicability

Review each air contaminant source and each pollutant to determine if the air contaminant source is subject to Section 112 (Maximum Achievable Control Technology, MACT), Part C of Title I (Prevention of Significant Deterioration, PSD), and Part D of Title I (Non attainment NSR) of the federal Clean Air Act. If, for the applicable pollutant, one or more of the above rules applies, then BAT is equivalent to the most stringent of the above applicable standards. (Note, this requirement of S.B. 265 applies to any permit ***issued*** on or after August 3, 2009. Also note that this approach follows long standing DAPC policy.)

Note that the format of the BAT limit established needs to follow the standard format for each of the above requirements. For instance, for BACT and LAER limits, U.S. EPA requires typically requires one or more short term limits (an emission rate limit (like lb/hr) and a technology based limit like (ppm, % control, etc.) and an annual limit. For MACT based BAT limits, the format should be in the same format as found in the applicable MACT. Since most MACT's do not have annual limits, no annual limit would be established. For any MACT, BACT, LAER BAT based limit, you do not use the table found in Step 4 below.

Do the above analysis for each criteria pollutant or criteria pollutant precursor separately.

If you determine a limit based on this step, then use ORC 3704.03(T) for the applicable rule citation for the BAT limit and the typical MACT, BACT and LAER citation for their equivalent limits. You can use the typical "the requirements of this rule are equivalent to MACT/BACT/LAER requirements" language.

If, for the particular pollutant, one or more of the above standards apply, then BAT is the MACT/BACT/LAER limit. Do not establish another BAT limit for that pollutant. BAT has been determined and you do not need to do the rest of the below procedures.

If, for the particular pollutant, none of the above standards apply, then proceed to step three.

3. Reasonably Available Control Technology (RACT) Minimum Limits

Review each air contaminant source to determine if the controlled potential to emit of volatile organic compounds (VOC) or nitrogen oxides (NOx) is greater than or equal to 10 tons per year (controlled is used in this case because the <10 ton/yr exemption is based on controlled emissions). For those air contaminant sources where the controlled potential to emit of VOC is greater than or equal to 10 tons per year, review the rules of OAC Chapter 21 (Carbon Monoxide, Photochemically Reactive Materials, Hydrocarbons, and related Materials Standards) that were effective on January 1, 2006. Determine if any VOC rule for any location in the State applies to the same size and type of source you are considering. If a January 1, 2006 effective VOC rule applies anywhere in the State for your type of source, then BAT is determined to be, at a minimum, equivalent to the most stringent VOC rule no matter where in the State that rule applies.

For those air contaminant sources where the controlled potential to emit of NOx is greater than or equal to 10 tons per year, review the rules of OAC Chapter 110 (Nitrogen Oxides - Reasonably Available Control Technology) that exist today. Determine if any VOC rule for any location in the State applies to the same size and type of source you are considering. If the NOx RACT rule applies anywhere in the State for your type of source, then BAT is determined to be, at a minimum, equivalent to the most stringent NOx RACT rule no matter where in the State that rule applies.

The format for the limit established in this step should be identical to the format of the RACT rule you are using to establish BAT. You would not add any additional limits (like a ton/year limit) and you would not use the table described in Step 4 below.

Note you do not necessarily need to use the RACT monitoring, recordkeeping, reporting and testing requirements. These can be developed independently of the RACT rule requirements.

If you determine a limit based on this step, then use ORC 3704.03(T) for the applicable rule citation. You should not use the RACT rule citation in this case.

If a RACT limit should be established, then use that limit as BAT for VOC. Then, move one to Step four for any remaining pollutants. If there is not RACT VOC limit applicable, then move on to Step four.

4. Case-by-Case BAT Limits

This step involves two sub steps. First, the permit writer should review each air contaminant source to determine BAT using all past procedures for a case-by-case determination. This step needs to be done for each criteria pollutant.

Second, the permit writer should determine the *format* for the BAT limit. Under this procedure, and as required under S.B. 265, only one limit is allowed for BAT. S.B. 265 says, in part:

> ...
> *Best available technology requirements established in rules adopted under this division shall be expressed only in one of the following ways that is most appropriate for the applicable source or source categories:*
>
> *(1) Work practices;*
> *(2) Source design characteristics or design efficiency of applicable air contaminant control devices;*
> *(3) Raw material specifications or throughput limitations averaged over a twelve-month rolling period;*
> *(4) Monthly allowable emissions averaged over a twelve-month rolling period.*[2]
>
> ...

In order to help determine what BAT limit format is "most appropriate", DAPC has developed what it believes is "most appropriate" for many common source categories. These "most appropriate" decisions are detailed in the attached table called *Best Available Technology Emission Limit Format Table.*

Permit writers should review the *Best Available Technology Emission Limit Format Table* to find the closest match to the source type under review. Once the source type is determined, review the table to find the BAT limit format that DAPC has determined is appropriate for the BAT limit. Then, take the case-by-case BAT determination and convert it to the BAT emission limit format found in the table. The result is the BAT limit for the permit.

For example, if the type of source you are considering is a combustion turbine (either combined cycle or single cycle), then review the *Best Available Technology Limit Format Table* under the EU Description column until you find the emissions unit description for Combustion Turbine. For PM, there are two items listed, one for cases where controls are required and one for when controls are not required. If controls are required, then review

---

2 DAPC believes these limits (item 4) should be in the format: tons of emission per rolling, 12 month period.

the BAT Limit Format column to determine the format for the BAT limit. In this case, the format is "X percent control". This means that the BAT is going to be in the format of a percent control. If, on the other hand, controls are not required, then the BAT Limit Format column says the limit shall be in the format of X.X pounds/mmBtu heat input.

Note, that under S.B. 265, Ohio EPA cannot include more than one BAT emission limit per pollutant. So, only use the one limit you have selected from the table. The exception to this is described in the response to Question 5 below.

If you determine a limit based on this step, then use ORC 3704.03(T) as the applicable rule citation associated with the BAT limit.

Once you have completed this step, move on to Step 5.

5. Develop any monitoring, record keeping, reporting and testing requirements needed to support the limit selected following our normal procedures.

6. Next, it is recommended you provide the permittee with a copy of the terms of the permit and discuss with them the decisions you made to determine BAT. Let them know of the current issues associated with S.B. 265 and advise them of their options associated with BAT. (See the answer to question 2 below.)

7. Your decision concerning the establishment of BAT under this policy should be documented in the Permit Strategy Write-up document in STARS2. This serves two purposes. First, the potential to emit and the basis are documented outside of the terms and conditions and this can be relied on in the future to determine whether the emissions unit has undergone a Chapter 31 modification. Second, in the event that a company has decided that they will not accept a BAT limit in accordance with this memo, this document can be shared with U.S. EPA who has requested to be notified in these instances.

8. Process the permit per our normal procedures from this point.

Common Questions and Answers

Question 1: If a company indicates they do not want Ohio EPA to establish a BAT limit because a BAT rule has not been developed, what should the permit writers do?

Bring the issue up with your Central Office DAPC permit contact for further guidance. We will discuss with the company their options. There options include: (1) agree to establish a BAT limit following this policy, (2) ask us to process the permit without a BAT limit, or (3) ask us to process the permit with a voluntary limit that is equivalent to BAT. If they choose

option (2) or (3) we will inform them that U.S. EPA would likely not approve the permit and that U.S. EPA may take some sort of action against either the company or Ohio EPA because they don't approve of the approach. We will also inform them that we are obligated to provide U.S. EPA with a copy of any issued permit that does not contain BAT.

Question 2: What happens if I cannot locate my source type on the Best Available Technology Emission Limit Format Table?

Determine which other source category is most like the source type you have. Use that source category's BAT Limit Format. If you cannot find a similar source type, contact your Central Office DAPC permit contact for further guidance.

Question 3: Ohio EPA has used the BAT rule to establish used oil specification limits in the past. These limits have been established to ensure hazardous waste was not burned and to ensure air emissions would not cause health or welfare effects. Can we continue to use the BAT rule to do this?

Since the BAT rule only allows us to establish one limit per pollutant, and we normally already have established a limit for a combustion device, we do not feel we can use BAT to establish used oil specification limits. However, because used oil can contain unacceptable amounts of various pollutants that could cause health and welfare effects, DAPC believes it is appropriate to continue to limit the use oil specifications in permits. However, instead of using BAT as the applicable rule, DAPC believes we should use the nuisance rule instead. Therefore, please cite OAC rule 3745-15-07 as the applicable rule for the used oil specification requirements in permit from this date forward.

Question 4: DAPC's interpretation of S.B. 265 is that only one BAT limit can be established. What happens when an emission unit has more than one stack? For instance, an asphalt plant typically has an emission point from the baghouse, but then also has fugitive emissions from the asphalt loading operations. Can permit writers still establish a BAT limit for each stack?

Yes and no. If the BAT control approach is different for each stack, then you can establish a limit for each stack. For instance in the example of the asphalt plant above, the baghouse stack is limited by the gr/dscf limit established for the baghouse. This limit has nothing to do with the emissions associated with the asphalt loading operation. As such, you can establish a BAT limit for the asphalt loading operation separately. However, take the example of a printing line with an incinerator for control. For this example, we will assume 95% capture and 95% destruction. In this example the printing line would have emissions coming out of the incinerator stack and fugitive emissions from the line that don't get captured. The BAT emission limit you establish is 90.25% overall control. Since the BAT limit established

covers all emissions associated with the emissions unit, you do not need to establish a separate BAT limit for the fugitive emissions.

Question 5: In the past DAPC has considered control technology to be federally enforceable such that for new source review (NSR) applicability purposes, the **controlled** potential to emit (PTE) could be used rather than the **uncontrolled** PTE to determine if a source tripped major NSR. We have used this approach for two reasons: (1) because we were issuing an installation permit under a federally approved (and federally enforceable) NSR program, and (2) because our BAT requirements were approved as part of the federally approved (and federally enforceable) SIP. This approach resulted in more permits being able to be issued direct-final because they were not considered to be synthetic minor permits avoiding major NSR.

Currently, state law under S.B. 265 does not allow us to establish BAT (because we have not developed rules that define BAT for the sources), the federally enforceable SIP continues to require us to impose BAT (because it currently has our historical rules), and this policy currently instructs permit writers to continue to establish BAT, although on a limited bases compared to the historical practice. The question is… Can we continue to determine PTE after controls for major NSR applicability purposes?

No, because the state law does not currently allow us to establish BAT, we do not feel it is appropriate to determine major NSR applicability based on emissions after controls. From this day forward, all major NSR applicability determinations should be made based on emissions prior to controls. Note, this is now consistent with our historical approach for Title V applicability.

Question 6: If a MACT applies and the MACT does not include an annual limit, can we establish an annual limit as part of BAT?

No, if the MACT applies, then only list the limits/control requirements/operational restrictions as BAT. Do not add any other limits

Question 7: What happens if both a MACT applies to a source and a RACT rule applies to the source? Which is BAT? What happens if there is a similar source RACT rule that is more stringent than the MACT?

If MACT applies to the source and a RACT rule applies to the source (actually applies, not because it is a similar source under step 3 above), then MACT would represent BAT.

If MACT applies to the source and a "similar source" RACT rule could apply under step 3 above, the MACT is BAT, not the "similar source" RACT.

Question 8: I have a situation where the permittee does not want their limit to follow the limit format in the table under Step 4. What can I do?

Under Step 4 above, the limit must be in the format described in the table. There are two alternatives if they don't like the format required in the table. First, they can decide they don't want a BAT limit, and, instead, want a voluntary limit that is similar to BAT. In that case, we can be more flexible concerning the BAT limit format. Second, they could decide they don't want a BAT limit at all. If that is the case, you need to inform them that U.S. EPA will be given a copy of the permit and that U.S. EPA is may to take some action because they feel BAT is needed.

Question 9: I would like to establish a different format for the BAT limit instead of the limit established in Step 4 above. For instance, I would like to establish a work practice limit instead of an emission rate limit. Can I do this?

No, except for the options described in the response to Question 9 above, you must follow the BAT format described in the Step 4 table.

If you have any questions or concerns about establishing BAT for particular source, please contact your Central Office permit contact to discuss.

MH/mh
Post090803BATv7.docx

Cc: Chris Korleski, Director
Drew Bergman, Dir Off.
Bryan Zima, Legal
Bob Hodanbosi, DAPC
Andrew Hall, DAPC
All CO permit reviewers
All DO/Laa Air Unit Supervisors

Best Available Technology Emission Limit Format Table

EU Description	BAT Limit Format	BAT Limit Notes
Acid Production		
PM controlled	X gr PM/dscf	
PM uncontrolled	X lbs PM/ton acid produced	
PM10 controlled	X gr PM10/dscf	
PM10 uncontrolled	X lbs PM10/ton acid produced	
NOx	X lbs NOx/ton acid produced	
SO2	X lbs SO2/ton acid produced	
CO	X lbs CO/ton acid produced	
VOC	X lbs VOC/ton acid produced	
Lead	X lbs Lead/ton acid produced	
Asphalt Plant		
PM	X.XX gr/dscf	Baghouse required at 0.03
PM10	X.XX gr/dscf	
NOx	X pounds NOx/ton asphalt produced	
SO2	X pounds SO2/ton asphalt produced	
CO	X pounds CO/ton asphalt produced	
VOC	X pounds SO2/ton asphalt produced	
Batch Process (Chemical or Physical)		
PM controlled	X.XX gr/dscf	
PM uncontrolled	X pounds PM/batch material produced	
PM10 controlled	X.XX gr/dscf	
PM10 uncontrolled	X pounds PM/batch material produced	
VOC controlled	X percent overall control	
VOC uncontrolled	X pounds VOC/batch material produced	
NOx controlled	X percent overall control	
NOx uncontrolled	X pounds NOx/batch material produced	
SO2 controlled	X percent overall control	
SO2 uncontrolled	X pounds SO2/batch material produced	
CO controlled	X percent overall control	
CO uncontrolled	X pounds CO/batch material produced	
Boiler (gas, oil, coal, etc.)		
PM controlled	X.XX gr/dscf	
PM uncontrolled	X pounds PM/mmBtu	
PM10 controlled	X.XX gr/dscf	
PM10 uncontrolled	X pounds PM/mmBtu	
NOx	X pounds NOx/mmBtu	
SO2 controlled	X percent overall control	
SO2 uncontrolled	X pounds SO2/mmBtu	
CO controlled	X pounds CO/mmBtu	
CO uncontrolled	X pounds CO/mmBtu	
VOC	X pounds VOC/mmBtu	
Sulfuric Acid Mist controlled	X pounds Sulfuric Acid Mist/mmBtu	
Sulfuric Acid Mist uncontrolled	X pounds Sulfuric Acid Mist/mmBtu	

Best Available Technology Emission Limit Format Table

EU Description	BAT Limit Format	BAT Limit Notes
Cement Kilns		
PM controlled	X lbs PM/ton raw material feed	
PM uncontrolled	X lbs PM/ton raw material feed	
PM10 controlled	X lbs PM10/ton raw material feed	
PM10 uncontrolled	X lbs PM10/ton raw material feed	
NOx	X lbs NOx/ton clinker produced	
SO2	X lbs SO2/ton clinker produced	
CO	ppm	either CO or VOC as good combustion indicator
VOC	ppm	either CO or VOC as good combustion indicator
Lead	X lbs Lead/ton clinker produced	
Coke Ovens		
PM controlled	X gr PM/dscf	
PM uncontrolled	X lbs PM/ton coke produced	
PM10 controlled	X gr PM10/dscf	
PM10 uncontrolled	X lbs PM10/ton coke produced	
NOx	X lbs NOx/ton coke produced	
SO2 controlled	X percent overall control	
SO2 uncontrolled	X lbs SO2/ton coke produced	
CO	X lbs CO/ton coke produced	
VOC	X lbs VOC/ton coke produced	
Lead	X lbs Lead/ton coke produced	
Cold Cleaner/Degreaser	X Tons VOC /rolling, 12-months	
Combustion Turbine		
PM controlled	X.XX gr/dscf	
PM uncontrolled	X pounds PM/mmBtu	
PM10 controlled	X.XX gr/dscf	
PM10 uncontrolled	X pounds PM/mmBtu	
NOx controlled	X ppm	
NOx uncontrolled	X ppm	
SO2 controlled	X percent overall control	
SO2 uncontrolled	X pounds SO2/mmBtu	
CO controlled	X ppm	
CO uncontrolled	X ppm	
VOC	X ppm	
Sulfuric Acid Mist controlled	X percent overall control	
Sulfuric Acid Mist uncontrolled	X pounds Sulfuric Acid Mist/mmBtu	
Concrete Batch Plant		
PM controlled	X.XX gr/dscf	Baghouse required at 0.03
Crematoriums (animal or human)		
PM controlled	X lbs/100 lbs charged	
PM uncontrolled	X lbs PM/ton glass produced	

Best Available Technology Emission Limit Format Table

EU Description	BAT Limit Format	BAT Limit Notes
PM10 controlled	X gr PM10/dscf	
PM10 uncontrolled	X lbs PM10/ton glass produced	
NOx	X lbs NOx/ton glass produced	
SO2	X lbs SO2/ton glass produced	
CO	X lbs CO/ton glass produced	
VOC controlled	X % control	
VOC uncontrolled	X lbs VOC/ton glass produced	
Lead	X lbs Lead/ton glass produced	
Fugitive Particulate Sources		
PM	Opacity	roof monitors, doors, windows,
Incinerator		
PM	X lbs PM/100 pounds charged	
PM10	X lbs PM/100 pounds charged	
NOx	X lbs PM/100 pounds charged	
SO2	X lbs PM/100 pounds charged	
CO	X lbs PM/100 pounds charged	
VOC	X lbs PM/100 pounds charged	
Industrial Burner (burner emissions)		
PM controlled	X.XX gr/dscf	
PM uncontrolled	X pounds PM/mmBtu	
PM10 controlled	X.XX gr/dscf	
PM10 uncontrolled	X pounds PM/mmBtu	
NOx controlled	X pounds NOx/mmBtu	
NOx uncontrolled	X pounds NOx/mmBtu	
SO2 controlled	X pounds SO2/mmBtu	
SO2 uncontrolled	X pounds SO2/mmBtu	
CO controlled	X pounds CO/mmBtu	
CO uncontrolled	X pounds CO/mmBtu	
VOC	X pounds VOC/mmBtu	
Industrial Material Dryer		
PM controlled	X.XX gr/dscf	
PM uncontrolled	X pounds PM/ton material processed	
PM10 controlled	X.XX gr/dscf	
PM10 uncontrolled	X pounds PM/ton material processed	
NOx	X pounds NOx/ton material processed	
SO2	X pounds SO2/ton material processed	
CO	X pounds SO2/ton material processed	
VOC controlled	X percent overall control	
VOC uncontrolled	X pounds VOC/ton material processed	
Material Handling - conveyor	X gr PM/dscf	
PM controlled	X gr PM/dscf	point source
PM uncontrolled	Opacity	point source
PM10 controlled	X gr PM/dscf	point source

Best Available Technology Emission Limit Format Table

EU Description	BAT Limit Format	BAT Limit Notes
PM10 uncontrolled	Opacity	point source
PM controlled	Opacity	fugitive
PM uncontrolled	Opacity	fugitive
PM10 controlled	Opacity	fugitive
PM10 uncontrolled	Opacity	fugitive
Material Handling - pnumatic		
PM	X gr PM/dscf	
PM10	X gr PM/dscf	
Material Storage Piles		
PM	Opacity	No visible particulate emissions except for a period of time not to exceed one minute during any sixty-minute observation period.
Paint Booth (21-07)	N/A	21-07 is history
Paint Line (21-09 - Exempt)	X Tons VOC per rolling, 12-month period	
Paint Line (21-09)		
PM controlled	X gr PM/dscf	
VOC controlled	X percent overall control	
VOC uncontrolled	X Tons VOC per rolling, 12-month period	
Pipe/Valve Fugitives	X Tons VOC per rolling, 12-month period	
Printing Line		
VOC controlled	X percent overall control	
VOC uncontrolled	X Tons VOC per rolling, 12-month period	
Refinery Process Units	X Tons VOC per rolling, 12-month period	
Roadways and Parking Areas (Paved)		
PM	Opacity	No visible emissions except for a period of time not to exceed one minute during any sixty-minute observation period.
Roadways and Parking Areas (Unpaved)		
PM	Opacity	No visible particualte emissions except for a period of time not to exceed three minutes during any sixty-minute observation period.
Shot Blaster		
PM	X gr PM/dscf	Baghouse required
PM10	X gr PM10/dscf	
Steel/Iron/Other Furnace		
PM controlled	X gr PM/dscf	

Best Available Technology Emission Limit Format Table

EU Description	BAT Limit Format	BAT Limit Notes
PM uncontrolled	X lbs PM/ton metal produced	
PM10 controlled	X gr PM10/dscf	
PM10 uncontrolled	X lbs PM10/ton metal produced	
NOx	X lbs NOx/ton metal produced	
SO2	X lbs SO2/ton metal produced	
CO	X lbs CO/ton metal produced	
VOC	X lbs VOC/ton metal produced	
Lead	X lbs Lead/ton metal produced	
Smelter		
PM controlled	X gr PM/dscf	
PM uncontrolled	X lbs PM/ton ore processed	
PM10 controlled	X gr PM10/dscf	
PM10 uncontrolled	X lbs PM10/ton ore processed	
NOx	X lbs NOx/ton ore processed	
SO2	X lbs SO2/ton ore processed	
CO	X lbs CO/ton ore processed	
VOC	X lbs VOC/ton ore processed	
Lead	X lbs Lead/ton ore processed	
Storage Tank	X Tons VOC per rolling, 12-month period	