Division of Air Pollution Control
Response to Comments
Draft Revision of Engineering Guide #69 Comment Period

Draft: "Revision of Engineering Guide #69: Air Dispersion Modeling Guidance"

Agency Contact for this Package

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Ohio EPA provided a comment period which ended on November 1, 2013. This document summarizes the comments and questions received during the associated comment period along with Ohio EPA's responses.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. The name of the commenter follows the comment in parentheses.

General Comments

Comment 1:
Suggest updating the format to more closely match other OEPA documents and engineering guides. **(Sean Vadas, Akron Regional Air Quality Management District)**

Response 1:
Ohio EPA has formatted the document accordingly.

Comment 2:
Legal Effect of Engineering Guidance: The guidance (as distinguished from underlying statutes and regulations relating to modeling requirements) should be clear that it is not binding, does not have the force and effect of law, is not a "rule" as defined in section 119.01(C) of the Revised Code, and is not a "policy" as defined in section 3745.30(A)(1) of the Revised Code. These disclaimers should be given to properly notify the public, and Ohio EPA staff, of the nature of the guidance. The title "Rule Synopsis" for the summary of the changes to draft Engineering Guide #69 is an example of improper and confusing labeling. Clearly, the guidance is not, and could not lawfully be, a "rule" for which a "Rule

Synopsis" would be appropriate." **(Robert L. Brubaker, Porter, Wright, Morris & Arthur LLP)**

Response 2:
Ohio EPA agrees with your comments and has provided a footnote at the heading of Engineering Guide 69 to clarify.

Please note, the "Rule Synopsis" heading was inadvertently, in error, included in the Engineering Guide synopsis.

Comment 3:
The general procedure of using concentrations associated with the use of worst case meteorology simultaneously with worst case emissions over all emission sources all the time when using the preferred U.S. EPA dispersion model, AERMOD, has been shown to be overly conservative. Even using "actual" emissions simultaneously with meteorology in low wind regimes for 1 hr standards has proved to be very conservative and untenable in air quality demonstrations. Is it possible that Ohio EPA may in the near future promote the use of documented and proven methods and fixes such as those offered by EPRI, e.g. SHARP, EMVAP, and DISTANCE_DEBUG to address the model deficiencies. **(George J. Schewe, Trinity Consultants)**

Response 3:

Ohio EPA agrees that these EPRI-developed tools, e.g., SHARP, EMVAP, and DISTANCE_DEBUG may have the potential to advance the predictive capabilities of the AERMOD model and the reliability of the predicted concentrations. However, at present U.S. EPA has not provided any memo or implementation guidance of the use of these tools in permit or SIP modeling. Until U.S. EPA provides further guidance on the acceptability of these tools, Ohio EPA will not be using these tools for permit or SIP applications.

Comment 4:
We understand that Ohio EPA is following the EPA's modeling guidance but this does not do much to relieve the problems associated with the overly conservative nature of AERMOD. To the extent possible OEPA's EG #69 guidance should allow for greater agency discretion in situations where the preferred model is believed to be overpredicting. We believe the Ohio EPA should support the use of alternative modeling methods developed by EPRI as well as use of CALPUFF in the near field especially in complex wind flow situations as potential modeling options. **(George J. Schewe, Trinity Consultants)**

Response 4:
U.S. EPA's Guideline on Air Quality Models (Appendix W, 40 CFR Part 51) (herein referred to as Appendix W) does provide for the use of alternatives to AERMOD, including CALPUFF, under certain situations. U.S. EPA notes that these models may be used without a formal demonstration of applicability provided they satisfy the recommendations for regulatory use; but that not all options in the models are necessarily recommended for regulatory use. Ohio EPA supports the use of the CALPUFF model on a case-by-case basis, as appropriate.

In many cases, the use of an alternative model will require approval from the *"appropriate reviewing authority"*. Ohio has been delegated NSR and PSD permitting activities, but U.S. EPA is clear in that such agencies are *"representatives"* of the respective regions and even in those circumstances, the U.S. EPA Regional Office retains the ultimate authority in decisions and approvals. U.S. EPA states that "in all regulatory analyses, especially if other-than-preferred models are selected for use, early discussions among Regional Office staff, State and local control agencies, industry representatives, and where appropriate, the Federal Land Manager, are invaluable and are encouraged. Agreement on the data base(s) to be used, modeling techniques to be applied and the overall technical approach, prior to the actual analyses, helps avoid misunderstandings concerning the final results and may reduce the later need for additional analyses."

As noted under Response 2, Ohio EPA does not recommend or intend to use the application of EPRI modeling tools in permit modeling or SIP applications for the State of Ohio until further guidance or acceptability is provided by U.S..

Specific Comments

Comment 5:

Clarification of References to "Toxics": The draft guidance refers to "pollutants listed in the ACGIH book" (see p. 14), "toxics" (see p. 7 and column 1 on Table 3), and "toxic pollutants" (see p.21). Whenever the guidance refers to "toxics," "air toxics," or "toxic pollutants," it should instead refer to "regulated toxic air contaminants listed in OAC Rule 3745-114-01." This will avoid confusion and avoid conflicts with section 3704.03(F) of the Revised Code. **(Robert L. Brubaker, Porter, Wright, Morris & Arthur LLP)**

Response 5:
Ohio EPA will use the term "air toxic" and has included a footnote at first use (in Answer 1) to identify its use is in reference to those contaminants listed in OAC Rule 3745-114-01.

Comment 6:
The Agency should avoid inadvertently subdelegating discretionary decision-making authority by virtue of this guidance. Discretionary decision-making authority should rest with the Director or the DAPC Division Chief. Any further subdelegation should be in writing, transparent, and rational. Ohio EPA should not have dozens of employees or agents with authority to make discretionary decisions about acceptable or unacceptable modeling.

On page 5 of the draft guidance, there is a statement that "[f]or criteria pollutants, the incremental impact cannot exceed one half of any PSD increment or, if no PSD increment exists, one quarter of the NAAQS." This statement, by itself, is too absolute, and does not reflect Ohio EPA's historical practice or legal authority. Ohio EPA does not have legal authority to cut the PSD increments in half, or to impose PSD increments where none exist under the Clean Air Act. This statement should be less hard-edged, not in the language of an absolute prohibition. These levels are called "state target ambient concentrations" and "Ohio Acceptable Incremental Impact" on p. 21 of the draft guidance and on Table 3. Impacts below these levels are the normal preference and expectation of Ohio EPA, and the Agency will take a hard look at predicted impacts above these levels. But the Agency has discretion to make exceptions and to consider all relevant facts and circumstances in the context of a particular application. It would be arbitrary and unlawful not to do so. In fact, the guidance explains in the Answer to Question 18, at p.25, how exceptions to the "state target ambient concentrations" will be evaluated. This exception process should be referred to when impacts less than the PSD increments or the NAAQS are discussed elsewhere in the guidance (as on pages 5 and 21 and in Table 3). Also, the officials authorized to decide whether to make such exceptions should be limited to those qualified to make consistent and informed judgments on acceptable ambient concentrations for a particular project, and the identity or position of those individuals should be spelled out in the guidance. (**Robert L. Brubaker, Porter, Wright, Morris & Arthur LLP)**

Response 6:
Ohio EPA understands your concerns and will update the language accordingly:

> *For criteria pollutants, Ohio EPA expects (with the exceptions discussed in the response to Question 15) that the incremental impact for the project will not exceed one half of any PSD increment or, if no PSD increment exists, one quarter of the NAAQS. These are general guidelines. The management of air quality impacts from new or modified sources is complex and it is necessary to balance air quality impacts from one new or modified source with the air quality impacts from future sources.*

Please note the commentor erroneously referred to Questions 18. The correct reference is Question 15.

We will follow the same procedures for review and approval of any submittal regarding exceptions this provision as we do for other approvals related to modeling. Ohio EPA does not believe it has or is subdelegating discretionary decision-making authority within this guide.

Comment 7:
Answer #1, 4th paragraph – all of the air toxics are subject to the same Table 3 value of 1 tpy. Why not state that here for convenience? **(George J. Schewe, Trinity Consultants)**

Response 7:
Ohio EPA has inserted a reference to the 1 tpy level per the commentor's request.

Comment 8:
The first sentence under "Screening Models:" recommends AERSCREEN only for simple terrain sources. AERSCREEN can be applied in elevated terrain so I'm not sure if that restriction was intentional. (In reference to Answer 2 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 8:
Ohio EPA has included the word "*elevated*" in the document to acknowledge that AERSCREEN can also be applied to elevated sources.

Comment 9:
Proposed Sunsetting of SCREEN3: The draft guidance would preclude the use of the SCREEN3 model for State-only modeling after December 31, 2013. See, e.g., p.7 of the draft guidance. There are several problems with this proposal. First, Ohio EPA has issued thousands – maybe even tens of thousands – of preconstruction permits that contain terms that require or allow the use of SCREEN3 for Air Toxics modeling. Those permits contain terms similar or identical to the Air Toxics recordkeeping requirements in the Agency's Permit Terms and Conditions Library, i.e., requiring the use of SCREEN3 or other Ohio EPA approved model to assess changes in toxic air contaminants or exhaust system design parameters to assure ongoing conformance with MAGLC (as described in "Review of New Sources of Air Toxics Emissions, Option A" and section 3704.03(F) of the Revised Code). Ohio EPA has no legal authority to unilaterally change those existing preconstruction permit terms and preclude the use of SCREEN3 to comply with the permits after December 31, 2013. Going forward, Ohio EPA would need to change its standard Terms and Conditions to reflect a change in modeling mandates. However, section 3704.03(F) of the Revised Code, as amended by S.B. 265, contemplated continuation of the Agency's Option A - Air Toxics Policy, with applicable statutory exceptions.

Substitution of more conservative modeling mandates for modeling of toxic air contaminants would not be consistent with S.B. 265. Finally, it makes no sense for the Agency to have relied upon the conservative results of SCREEN modeling for more than 20 years and then abruptly prohibit the use of that benchmark model. Since the regulation of listed toxic air contaminants in preconstruction permits is required by statute to be State-only, and not federally enforceable (see section 3704.03(F)(4)(d)), Ohio EPA is under no federal or State law mandate to eliminate the option of SCREEN3 modeling for purposes of regulating toxic air contaminants pursuant to section 3704.03(F) of the Revised Code. Ohio EPA should allow the continued use of SCREEN3 for Air Toxics modeling, particularly where required or otherwise authorized by an existing permit.

We would also take this opportunity to express our discontent with the general approach of modeling that invokes simultaneously the use of worst-case meteorology and worst-case emissions over all emission sources at all times, particularly when the preferred model (AERMOD) has been shown to be overly conservative when using actual emissions and actual meteorology in low-wind regimes for 1-hour standards. We would encourage Ohio EPA to be open to the use of documented and proven methods and fixes available through organizations such as the Electric Power Research Institute (EPRI) and AECOM Technology Corporation (AECOM) to address the known model deficiencies." **(Robert L. Brubaker, Porter, Wright, Morris & Arthur LLP)**

Response 9:
Ohio EPA will continue to accept SCREEN3 for state-only permit modeling.. This will not prevent applicants from using AERSCREEN in state-only permit modeling, but serves to provide continued support for SCREEN3 by Ohio EPA in state-only modeling.

However, U. S. EPA's April 11, 2011 guidance memo, *"AERSCREEN Released as the EPA Recommended Screening Model,"* clarifies that the replacement of SCREEN3 with AERSCREEEN is the preferred approach. AERSCREEN has been released as a full version, which implies that SCREEN3 is no longer supported by the federal agency. The SCREEN3 model is essentially a screening version of the ISCST3 model, which was replaced by AERMOD, and is subject to the same limitations as ISCST3. On the other hand, AERSCREEN is the screening model of AERMOD, the U.S. EPA's preferred model for near-field dispersion. Hence, it is appropriate for modelers and permit applicants to use AERSCREEN for all other screening applications not associated with state-only permit modeling.

Ohio EPA understands that AERSCREEN has more advanced options than the SCREEN3 model, to include better input parameters, more sophisticated procedures for the generation of worst-case meteorology using the state-of-the-science module AERMET, downwash inclusion using BPIPPRIM algorithms, and

terrain incorporation using AERMAP. SCREEN3 has limitations and cannot incorporate these options.

Ohio EPA agrees that the agency has relied upon the conservative results of SCREEN3 modeling for more than 20 years. However, it is not "abruptly" prohibiting the use of that "benchmark" model. Instead, Ohio EPA is opting for the better and more state-of-science model (AERSCREEN). Model formulations and updates are based on advancement of physical theories, efficient algorithms, software components and advancements in computing power. AERSCREEN has more advanced options than SCREEN3. Regardless, Ohio EPA will continue to accept SCREEN3 modeling results for state-only applications. Ohio EPA agrees that the regulation of listed toxic air contaminants in preconstruction permits is required by statute to be state-only, and not federally enforceable (see section 3704.03(F)(4)(d)). Therefore, Ohio EPA will continue to support SCREEN3 for state-only modeling applications involving the listed toxic air contaminants.

Ohio EPA acknowledges that the AERMOD platform is not perfect and often conservative in various modeling scenarios; nevertheless, it is the preferred model among the presently available modeling tools for regulatory purposes. It has gone through several updates recently, and frequently gets updates based on current progress in science, in addition to feedback from the end-users, regulatory agencies, and the regulated community. Ohio EPA is well informed about other modeling tools developed by EPRI and AECOM. However, at present, U.S. EPA has not provided any memo or implementation guidance for these tools in permit applications or SIP modeling protocols. Until U.S. EPA provides further guidance on these tools, Ohio EPA will not be using these tools. See Comments and Responses 2 and 3 for more information on this topic.

Comment 10:
Since SCREEN3 is being phased out this year, it seems like the paragraph and table discussing conversion factors could be removed. The conversion factors are built into AERSCREEN. Perhaps that SCREEN3 discussion could be put in Appendix B. (In reference to Answer 2 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Answer #2 under Screening Models. The conversion factors shown are all incorrect for AERSCREEN. They are listed in the AERSCREEN manual. **(George J. Schewe, Trinity Consultants)**

Response 10:
Ohio EPA will continue to accept SCREEN3 modeling results for state-only permit applications. Ohio EPA has updated this section to reflect our policy and the fact that AERSCREEN conversion factors are built in. We will retain the table since it is applicable to SCREEN3.

Comment 11:
The language in the third paragraph talking about terrain and the need to do an intermediate terrain analysis appears to be a hold-over from the ISC days. With AERMOD, we now have a refined technique for all terrain elevations. I'd remove paragraph 3 from this section. (In reference to Answer 2 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 11:
Ohio EPA is adjusting the language in this paragraph to reflect AERMOD/AERSCREEN techniques for all terrain elevations. However, we are retaining the language regarding the need for an intermediate analysis for cases where AERMOD/AERSCREEN are not the model of choice, for example, when SCREEN3 is used for state-only modeling.

Comment 12:
The language at the top states that EPA will not accept NWS data for sources located in intermediate or complex terrain. This may also be a hold-over from ISC. We don't automatically require site specific data for complex terrain sources. Rather, a requirement for reasonably representative met data applies to all sources. Perhaps you could add a sentence like: "If the source is in a complex wind environment, a site-specific met tower may be needed to collect representative data." Plus, the most representative NWS met site may not necessarily be the closest. (In reference to Answer 3 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 12:
Ohio EPA has updated this answer to reflect the concerns raised in U.S. EPA's comment.

Comment 13:
Question 3: What Meteorological Data Sets are to be used? The appropriate as per U.S. EPA two-minute wind speeds and directions (processed in AERMINUTE) are being used along with AERMET. But do these data sets include the recommendation from U.S. EPA to use a threshold wind velocity of 0.5 m/s? **(George J. Schewe, Trinity Consultants)**

Response 13:
Ohio EPA has processed the data sets according to the recommended U.S. EPA guidance, and used a threshold wind velocity of 0.5 m/s in the meteorological pre-processor, AERMET.

Comment 14:
The first sentence should read Table 8-1 and 8-2 instead of 9-1 and 9-2. (In reference to Answer 4 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 14:
Ohio EPA has made this correction.

Comment 15:
In the third and fourth paragraphs, the modeling of negative emissions is not appropriate for NO2 since all the NO to NO2 methods are screening. (In reference to Answer 4 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 15:
Ohio EPA has added clarifying language to address U.S. EPA's comment.

Comment 16:
This section mentions the modeling of roadways as fugitive emissions. EPA's draft modeling guidance for haul roads could be listed as a source for potential guidance source on how to model the roadways. (In reference to Answer 4.1 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 16:
Ohio EPA has included a reference to U.S. EPA's recommended guidance for modeling haul road fugitive emissions (Haul Road Workgroup Final Report, U.S. EPA, March 2, 2012).

Comment 17:
For clarity you may want to spell out the acronyms. (In reference to Answer 4.3 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 17:
Ohio EPA has included the full names of those abbreviations/acronyms used in Answer 4.3.

Comment 18:
I know this says for state-only modeling but I wanted to make sure of the State consistency with EPA policy. Since the AERMOD model changed in terms of its WKFLAG4 option, downwash occurs in PRIME within AERMOD at heights above GEP. Thus leaving downwash out of analyses because a stack is above GEP

does not match EPA's consideration of downwash. **(George J. Schewe, Trinity Consultants)**

Response 18:
Answer #5 recommends the requirement of building downwash for state modeling. The guidance suggests accounting for downwash when stack heights are not at or above the Good Engineering Practice (GEP). However, it should be noted that a stack above GEP is also associated with building downwash. The engineering guidance has not specified or recommended the exclusion of such stack heights (above GEP) in the modeling (Answer #5). Furthermore, it is highlighted in the comment above that downwash occurs in BPIP-PRIME within AERMOD for stack heights above GEP, too. Hence, Ohio EPA recommends that all stack heights, whether above or below the GEP stack height, should be included in the modeling to evaluate the building downwash effect.

Comment 19:
FYI. Technically, GEP is the greater of 1) 65m, 2) formula height for stacks in existence on January 12, 1979, or 3) the height determined by a fluid modeling study. EPA is expected to come out with a clarification memo on GEP and downwash which will likely discuss the need to include building information even for those sources with greater than formula height. Also, there may be changes to App. W language relevant to this but until those things happen, I don't have any specific comments. (In reference to Answer 5 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 19:
Ohio EPA will watch for the guidance and update this guide as appropriate.

Comment 20:
Answer #5.1- I do not understand the last sentence of this answer. **(George J. Schewe, Trinity Consultants)**

Response 20:
The commentor is referencing Question 5.1: What building height do I use if the building has a pitched roof? The last sentence states "An acceptable alternative is to assume a building height one half the distance up the pitched roof and the corresponding horizontal dimensions below that 'roof' (i.e., one horizontal dimension would also be halved)."

Ohio EPA is providing clarification on acceptable alternatives for the inclusion of pitched roofs in modeling. For a pitched roof, the building height is equal to one half the height between the peak of the pitched roof and the corresponding horizontal dimension below that pitched roof. The width of the pitched roof building is equal to one half of the horizontal dimension below the pitched roof.

Comment 21:
This section should reference the AERMOD Implementation Guide approaches for capped and horizontal stacks in cases where downwash applies. The recommendation on page 15 appears to be equivalent to the procedure for non-downwash cases. However, since the adjusted diameter can be quite large it causes issues when downwash is modeled using the PRIME algorithms. (In reference to Answer 6.1 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 21:
Ohio EPA has included a reference to the AERMOD Implementation Guide and a description of the U.S. EPA's procedure from that guide.

Comment 22:
We'd be OK with a process that is equivalent to what is in SCREEN3/AERSCREEN. However, I don't quite understand the derivation of the stack diameter value listed and whether all the heat is used or if only 45% of the total is considered sensible heat. (In reference to Answer 6.2 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Question 6.2: How do I model flares? Last sentence, first paragraph states "Ohio EPA/DAPC has used the following procedure, which is believed to be consistent with SCREEN3 and AERSCREEN…". If OEPA is recommending a technique, perhaps a better reference to consistency with the models should be found. "Believing" the consistency is a little weak. **(George J. Schewe, Trinity Consultants)**

Response 22:
The derivation in the guide is based on the method presented in *"Fundamentals of Stack Gas Dispersion."* The reference to the textbook is: "*Beychok, M., 1979. Fundamentals of Stack Gas Dispersion, Irvine, CA".* This is consistent with SCREEN3, which recommends a default radiative heat loss factor of 55%. This is very conservative as most gases have values about half of that.

Ohio EPA further explains and clarifies that:

"This method pertains to the "typical" flare, and will be more or less accurate depending on various parameters of the flare in question, such as heat content and molecular weight of the fuel, velocity of the un-combusted fuel/air mixture, presence of steam for soot control, etc. Hence, this method may not be applicable to every situation ..."

If the applicant can demonstrate other methods which are 'comparable or better' than the Ohio EPA method, they may submit their own by properly documenting the method in a modeling protocol.

We are also incorporating a method of flare modeling based on U.S. EPA's AERMOD Implementation Guide. AERMOD uses the suggested U.S. EPA's modeling method to derive the modeling input parameters needed for flares as pseudo point sources.

Comment 23:
This answer should include a reference to ambient air and the need to place receptors at locations where the general public is NOT precluded access, typically by a physical structure (e.g. fence). Also, most of the states use a tighter receptor resolution than 100m to find maximum concentrations. 50m is a common resolution particularly for fenceline hotspot analysis. Some states go even tighter. The need for tighter grids becomes less important the further you move from the source(s). I'd recommend adding 50m language at least for fence lines. (In reference to Answer 7 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 23:
Ohio EPA has added a reference to ambient air, and agrees with the recommendation of tighter receptor spacing on the fenceline and around other 'hotspots'. A reference to a recommendation of 50 m spacing in these areas has been added.

Comment 24:
Also on Page 17, the discussion of receptor elevations could simply state that elevations are required since the default mode of the model requires terrain and remove the language about terrain above stack height and simple terrain. Any exceptions to this would need to be made on a case-by-case basis, similar to the sloping terrain example given in the AERMOD Implementation guide. (In reference to Answer 7 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 24:
Ohio EPA agrees that receptor elevations are compulsory in modeling demonstrations since the default modes of both AERMOD and AERSCREEN include terrain elevations. Even if the terrain is "flat", the modeling needs to account for terrain features to predict air concentrations. For any exceptions, the modeling guidance should follow the AERMOD Implementation Guide. Clarification has been incorporated into the guidance.

Comment 25:
Question 11: How do I obtain background values when performing NAAQS analysis in Ohio? Will any consideration be given in determining background for

pollutants with three-year averaged values to agree with the probabilistic form of the standards for PM10, NO2, or SO2? **(George J. Schewe, Trinity Consultants)**

Response 25:
Ohio EPA recommends consulting the U.S. EPA's March 1, 2011 memo, ***"Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 Ambient Air Quality Standard,"*** which recommends a less conservative "first tier" approach for a uniform monitored background concentration. This approach is based on monitored design values for the latest 3-year period, regardless of the years of meteorological data to be used in the modeling. Adjustments to this approach may be considered in consultation with Ohio EPA and with adequate justification and documentation of how the background concentration was calculated. We have included a reference to this document in the guide.

Comment 26:
The language in this section appears to come from EPA's 1990 draft NSR workbook manual. While this is an acceptable approach, recently more emphasis has been placed on guidance in App. W which states in Section 8.2.3 that "all sources expected to cause a significant concentration gradient in the vicinity of the source or sources under consideration for emission limits should be explicitly modeled." The number of these sources is expected to be small. Consequently, using the App. W guidance and examining which sources are expected to cause a "significant concentration gradient" near the project source may result in fewer nearby sources modeled than the strict NSR workbook approach. Lastly, EPA has discouraged the use of the Q/D approaches but given the applicant must identify the sources that are screened out and must make those available for regulatory review scrutiny sounds like a reasonable approach. (In reference to Answer 12 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 26:
Ohio EPA has updated the above referenced language to acknowledge the present guidance found in Appendix W (40 CFR Part 51) dealing with inclusion (or exclusion) of sources.

Comment 27:
Regarding Q#16 (Rural vs. Urban): In a recent, simple modeling project (one stack paint booth, toxics) for Toledo, Ohio, I was told by TDOES that all of Lucas county must be modeled as Urban (even though my location did not meet the definition Urban). So it is my assumption that Lucas County is one of the "predominate classifications assigned to an entire county" as discussed in the second paragraph. Is it possible for Ohio EPA to include an Appendix indicating such designations and the population to use, otherwise the modeler would go

through the effort of the "land use or population density" calculations only to be told it doesn't matter and we have to use "urban" anyway. **(Shara Kay Hayes, Dine Comply, Inc.)**

Response 27:
For rural/urban classifications, Ohio EPA follows Section 7.2.3 in Appendix W. Often professional judgment is necessary. Additional clarification has been added to Engineering Guide 69 and Ohio EPA has also included a brief description and table for reference in a newly added Appendix C.

Comment 28:
Question 16: What determines whether a locale is rural or urban? The guidance here is satisfactory for SCREEN3 applications and for selecting AERSCREEN and AERMOD optional "urban" analyses. But the second paragraph is wrong in that it says "the inability of the models used to incorporate both rural and urban in a single run, a single, predominant classification was assigned for the entire county." In AERMOD, this is not true as one can specify "urban" option and then assign one or more sources as appropriate to that option while other sources will remain rural." **(George J. Schewe, Trinity Consultants)**

Response 28:
Ohio EPA agrees with the comment and acknowledges that sources in the modeling domain can be modeled as urban, rural, or both in a single run. Ohio EPA has deleted the statement, *"… the inability of the models used to incorporate both rural and urban in a single run, a single, predominant classification was assigned for the entire county*."

We have also provided some additional information regarding selection of rural or urban; however, often professional judgment is necessary.

Comment 29:
Question 17: How do you model PM2.5 secondary formation for PSD? Answer and guidance are a little premature as EPA's March 2013 guidance document is only a draft and subject to significant change. **(George J. Schewe, Trinity Consultants)**

Response 29:
Ohio EPA agrees that the draft guidance for PM2.5 permit modeling (March 4, 2013) is yet to be considered as final U.S. EPA guidance. Ohio EPA understands that this draft guidance represents the preliminary recommendations with respect to conducting PM2.5 PSD compliance demonstrations that account for contributions from secondary PM2.5. Furthermore, the above referenced draft guidance states that:

"Since each permitting action will be considered on a case-by-case basis, this document does not limit or restrict any particular approach applicants and permitting authorities may take to conduct the required compliance demonstrations."

Implementing the draft guidance for secondary PM2.5 modeling in permit applications is beneficial for Ohio EPA in reviewing the acceptable methods, data, and procedures applicable to secondary PM2.5 analyses. It helps the agency to gain an understanding in evaluating and reviewing methods, analyzing the resources and time constraints of secondary PM2.5 analysis, and enables troubleshooting of unforeseen issues in permit applications. Recently, Ohio EPA has come to understand that U.S. EPA is scrutinizing the various approaches conducted by the permit applicants/applications for such modeling. Hence, Ohio EPA recommends use of the principles in the guidance on PM2.5 for permit modeling.

In the event the final guidance conflicts with recommendations in our guide, Ohio EPA will make future changes as needed.

Comment 30:
"Question 28: Which averaging times should I use?" Is mislabeled and should be Question 18. **(George J. Schewe, Trinity Consultants and Sean Vadas, Akron Regional Air Quality Management District)**

Response 30:
Ohio EPA has corrected the error.

Comment 31:
This is good. Emphasizing the protocols and getting them in advance is very useful. (In reference to Answer 19 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 31:
Ohio EPA agrees.

Comment 32:
In reference to the answer of the Class I modeling analysis requirement in Question 21, the commentor suggests replacing "equation" with "ratio" and placing parenthesis around the elements in the numerator of the equation/ratio.

> "Answer 21: A Class I Modeling Analysis is required for any PSD facility that is within 300 km of a Class I Area and when the ratio below is greater than 10:
> (The annual steady state emission rate of permitted total tpy of SO2 + NOx + PM10 + H2SO4) / Distance to closest Class I Area in km"

(Paul F. Munn, The Mannik & Smith Group, Inc.)

You may want to reference the Federal Land Managers FLAG guidance somewhere here. Also, according to FLAG, the emissions to be used in the equation are tons per year based on 24-hour maximum emissions. It's not clear what the "annual steady state emission rate" in the equation on page 24 is referring to. (In reference to Answer 21 of the draft guidance). **(Randall Robinson, U.S. EPA Region 5)**

Response 32:
Ohio EPA has updated the ratio (and the use of the term "ratio"), Q(tpy)/d(km) on the basis of technical revisions contained in*The Federal Land Managers AQRV Workgroup (FLAG) Phase I Report – Revised (FLAG 2010*) guidance document. According to the revision, the emission in ton per year is based on 24-hour maximum allowable emissions (which are annualized) and "*d*" is the nearest distance to a Class I area in kilometers (km) from the source. For sources operating intermittently or seasonally, emissions from sources must be adjusted to account for year-round operation if the applicant uses the *Q/d* Initial Screening approach.

Ohio EPA also references the FLAG guidance as a guidance document available for use in such analysis.

Comment 33:
Regarding Q#25 (Ozone): Can Ohio EPA include a definition or explanation of what a "Qualitative Analysis" is? **(Shara Kay Hayes, Dine Comply, Inc.)**

Response 33:
Ohio EPA does not recommend any particular "Qualitative Analysis" method for evaluating ozone. The compliance demonstrations for ozone should be based on a holistic analysis of the new or modified emission source and the atmospheric environment in which the emissions source is to be located. The compliance demonstration may require multiple factors and assumptions as a part of the qualitative assessment. The applicant may want to consider monitoring, background concentration, meteorology and/or qualitative modeling, and the nature of emissions surrounding the new or modified emissions source in preparing the analysis. The qualitative modeling may be available from past or current SIP attainment demonstrations, published modeling studies, or peer-reviewed literature with estimates of model responsiveness to precursor emissions in contexts that are relevant to the new and modified source. Consultation with and/or the submission of a modeling protocol to Ohio EPA may be helpful in the preparation and submission of the qualitative analysis.

Comment 34:
I suggest adding a question regarding modeling of NOx. The answer could discuss the tiered approaches for NO to NO2 conversion and the need to get EPA approval for Tier 3. It could also mention the need to justify the inputs such as in-stack ratio and talk about data availability for those inputs. **(Randall Robinson, U.S. EPA Region 5)**

Response 34:
Ohio EPA agrees and has added new question and answer #26) to the guidance.

Comment 35:
No mention is given in the guidance for interpollutant offsets and modeling for ozone or PM2.5. **(George J. Schewe, Trinity Consultants)**

Response 35:
Ohio EPA believes that inter-pollutant offseting is a topic more suitably addressed in other guidance (permitting) while this guide focuses on modeling. Ohio EPA does not require modeling of ozone, and only a qualitative analysis is required if NOx or VOC emissions exceed the threshold of 40 tpy. For PM2.5 permit modeling, we will follow the U.S. EPA guidance, **"*Draft Guidance for PM2.5 Permit Modeling*."**

Comment 36:
In Table 3 Federal and State Modeling Standards and Significant Emission Rates, why is the annual PM2.5 NAAQS set at 15 ug/m3?"
(George J. Schewe, Trinity Consultants)

Response 36:
Ohio EPA has incorporated the recently revised annual PM2.5 standard level of 12.0 ug/m3. The 1997 standard is retained in the table as it has not yet been revoked for PSD purposes. The secondary standard remains 15.0 ug/m3.

Comment 37:
In Table 3 Federal and State Modeling Standards and Significant Emission Rates, why is the 1-hour SO2 Ohio Acceptable Incremental Impact set to 196 ug/m3? Same as the NAAQS? **(George J. Schewe, Trinity Consultants)**

Response 37:
Ohio EPA has set the 1-hour SO2 Ohio acceptable incremental impact at 196 ug/m3, the same as NAAQS, because U.S. EPA has not formally proposed or finalized a Class II PSD increment value. U.S. EPA has recommended an interim increment value of 3 ppb (7.9 ug/m3) for the 1-hour SO2 and we have included that in the guide as applicable to Class II PSD modeling

Comment 38:
In Table 3 Federal and State Modeling Standards and Significant Emission Rates, why is the 1-hour NO2 Ohio Acceptable Incremental Impact set to 188 ug/m3? Same as the NAAQS? **(George J. Schewe, Trinity Consultants)**

Response 38:
U.S. EPA has not formally proposed or finalized a Class II PSD increment value for the 1-hour NO2 standard; therefore, Ohio EPA has set the Ohio acceptable incremental impact at a level the same as the standard, 188 ug/m3. U.S. EPA has recommended an interim Class II PSD increment value of 4 ppb (7.5 ug/m3), for the1-hour NO2 and we have included that in the guide as applicable to Class II PSD modeling

Comment 39:
Revisions to Table 3: We urge Ohio EPA to make Table 3 readily accessible and available on its web site as a separate, stand-alone document. Table 3 is the most useful information to most permit applicants and modelers. It is, by its nature, subject to change from time to time, on a more frequent basis than the text of Engineering Guide #69. It would benefit project planners and permit applicants to have more direct and immediate access to the information in Table 3, and it would benefit Ohio EPA to be able to make timely updates to the information in Table 3 without undertaking a more cumbersome or resource-intensive revision of Engineering Guide #69.

The information in Table 3 is vitally important to project planning, and it must obviously be completely accurate and reliable. There are errors and/or outdated information in the current version of the Table, and opportunities for greater clarification. For example, the current version of Table 3 does not reflect recent amendments to the NAAQS for PM2.5 and SO2, and does not list NOx as an ozone precursor. Next week, we will submit a markup of Table 3 with recommended corrections, updates, and clarifications. We note that the next-to-last column in Table 3 is embedded into Air Services. It will be necessary for Ohio EPA to conform Air Services to the final version of Engineering Guide #69. **(Robert L. Brubaker, Porter Wright Morris & Arthur LLP)**

Response 39:
Ohio EPA agrees that Table 3 is crucial to permit applicants, and subject to change more frequently than this guide. Ohio EPA has updated the table based on the most recent U.S. EPA guidance on permit modeling and new NAAQS standards for criteria pollutants (1-hour SO2 and NO2 and annual standard of PM2.5). The updated table also includes the significant emission rates for NOx and VOC for ozone analysis in PSD modeling. Ozone analysis is required if NOx or VOC have a threshold significant emission rates of 40 tpy or more. Question

25 (*How do I evaluate Ozone?*) of the guide addresses the above issue related to evaluating ozone.

It is Ohio EPA policy to provide complete, accurate and reliable guidance through the engineering guide to the permit applicants, modelers and other stakeholders. The agency strives to keep the modeling and permitting communities informed and up-to-date on the most recent rules and guidance, as well as recent amendments to rules/guidance from U.S. EPA or the Ohio EPA. To increase the visibility and accessibility to the information in Table 3, Ohio EPA will publish the final table as a stand-alone item with Engineering Guide #69 on the agency website at: http://www.epa.state.oh.us/dapc/engineer/eguides.aspx. However, Table 3 is fundamentally a part of Engineering Guide 69 and future revisions will continue to follow Ohio EPA procedures for Engineering Guides.

In addition, Ohio EPA is providing clarification in the guide that with respect to criteria pollutants, it is Ohio EPA's intention to follow US EPA modeling thresholds, so that if there is a change in the future that is not reflected in the guide, that change can be implemented immediately until Ohio EPA modifies the table to reflect a different value.

The commentor did submit additional comments in a markup of Table 3 that are also addressed in this response document.

Comment 40:
Attached (*see the end of this document*) is a revised version of Table 3 attached to Engineering Guide No. 69 that incorporates our recommended corrections and revisions. This supplements our November 1, 2013 comments to you. As we indicated in our November 1 comments, we think Table 3 should be readily accessible on Ohio EPA's web site as a stand-alone document, so that it can be efficiently and timely updated when the need arises. If the Agency decides that changes in Table 3 are warranted, we think it is essential to provide adequate notice and opportunity for comment before changes are made. We urge you to prominently display the date of the most recent update to Table 3. (**Robert L. Brubaker, Porter, Wright, Morris & Arthur LLP)**

Response 40:
Ohio EPA thanks the commentator for providing comments with an updated Table 3 (Federal and State Modeling Requirements). Ohio EPA agrees with many of the suggested changes and has incorporated several of those recommendations in our updated table. The following comments and our changes are highlighted and expanded upon below. The full set of requested changes is available upon request.

Comment 41:
Table 3 of Draft Engineering Guide #69 indicates that the modeling threshold for toxic air contaminants is 1 ton per year. However, the response to Question #4 in Engineering Guide #70 indicates that modeling may be required for highly toxic compounds emitted at less than 1 ton per year.

To resolve the conflict with Engineering Guide #70, a footnote could be added to Table 3 of Draft Engineering Guide #69 indicating that Ohio EPA may require modeling for highly toxic compounds emitted at less than 1 ton per year. (**Matt Stanfield, City of Toledo)**

Response 41:
Draft Engineering Guide #70[1] is correct in that if a project is going to emit a "highly toxic" compound in amounts of less than 1.0 ton/yr, modeling may still be needed. The determination that modeling is needed for less than 1.0 ton/yr sources is made on a case-by-case basis and is designed to ensure public health and welfare are protected.

Although the January 31, 1989 inter-office communication (memorandum) from Bob Hodanbosi establishes a 1.0 ton/yr cut-off for modeling, this cut-off is not established in any rule or law, and, therefore, when necessary, Ohio EPA can require modeling for less than 1.0 ton/yr sources.

We have added the following footnote to the end of the table: "(r) Note that modeling may be required by Ohio EPA when the emission rate is less than 1.0 ton/yr in the case of "highly toxic" compounds. If the permittee believes that compound that will be emitted might be considered "highly toxic" please contact the Ohio EPA permit writer to discuss the need for modeling."

Comment 42:
Adoption of Federal Modeling Thresholds: We strongly support the alignment of Ohio's modeling thresholds with U.S. EPA's. In particular, the current modeling threshold (which is only about 60% of the federal modeling threshold for SO2 and NOx (25 tpy instead of 40 tpy) provides no appreciable environmental or information benefit, but results in negative impacts on investment and economic development in Ohio. Applicants have responded to Ohio's unduly stringent modeling thresholds for SO2 and NOx by sub-optimal capping of emissions or production to avoid the delay and complications inherent in SO2 and NOx modeling (which is generally less reliable and more conservative the smaller the source), by moving the project to another State, or by not doing the project at all. This results in an economic disincentive to development in Ohio that does not exist in neighboring or other States. Ohio EPA's proposed changes to the

[1] Note that Engineering Guide #70 was issued draft but has never been finalized. It also has not been updated to consider the changes associated with the enactment of ORC 3704,03(F)(4).

modeling thresholds would eliminate those negative impacts and have positive economic effects. **(Robert L. Brubaker, Porter, Wright, Morris & Arthur LLP)**

Response 42:
Thank you for your comment.

Comment 43:
If SCREEN3 is only going to be acceptable until December 31, 2013, why include Appendix B SCREEN/TSCREEN Model Application Guidance? TSCREEN is based on SCREEN2 by the way which is no longer supported by EPA." **(George J. Schewe, Trinity Consultants)**

Response 43:
Ohio EPA had previously planned to support SCREEN3 modeling for permit applications until December 31, 2013. However, Ohio EPA has decided we will continue to support SCREEN3 for state-only permit modeling applications. Hence, the agency decided to keep Appendix B on SCREEN/TSCREEN since it is applicable to SCREEN3.

End of Response to Comments

Table referenced in Comment 40

Last Updated: 11/13/2013

Table 3
Ohio EPA Air Quality Modeling
Significant Emission Rates and Maximum Acceptable AQ Impact*

Pollutant	NAAQS			PSD and NNSR Significant (Major Modification) Emission Rates (TPY)	PSD Class I		PSD Class II		PSD Monitoring De Minimis Concentrations (ug/m^3)	Ohio EPA	
	Averaging Period	Primary Standard	Secondary Standard		Significant Impact Levels (ug/m^3)	Increments (ug/m^3)	Significant Impact Levels (ug/m^3)	Increments (ug/m^3)		Significant Emission Rates for AQ Modeling (TPY)	Generally Acceptable Incremental Impact (ug/m^3)
Reference(s)		A		B	C	D	E	D	F	G	
$PM_{2.5}$ (filterable + condensable)	Annual	12 ug/m^3 See Note (1)	15 ug/m^3 See Note (1)	$PM_{2.5}$ - 10 SO_2 - 40 NO_x - 40	0.06 Maximum	1 Maximum	0.3 Maximum	4 Maximum	None	$PM_{2.5}$ - 10	2 Maximum
	24-hr	35 ug/m^3 See Note (2)	35 ug/m^3 See Note (2)		0.07 Maximum	2 2nd High	1.2 Maximum	9 2nd High	4 Maximum		4.5 2nd High
PM_{10} (filterable + condensable)	Annual	None	None	15	0.2 Maximum	4 Maximum	1 Maximum	17 Maximum	None	15	8.5 Maximum
	24-hr	150 ug/m^3 See Note (3)	150 ug/m^3 See Note (3)		0.3 Maximum	8 2nd High	5 Maximum	30 2nd High	10 Maximum		15 2nd High
Sulfur Dioxide (SO_2)	Annual	0.030 ppm (80 ug/m^3) Maximum	None	40	0.1 Maximum	2 Maximum	1 Maximum	20 Maximum	None	40	10 Maximum
	24-hr	0.14 ppm 365 ug/m^3 2nd High	None		0.2 Maximum	5 2nd High	5 Maximum	91 2nd High	13 Maximum		45.5 2nd High
	3-hr	None	0.5 ppm (1,300 ug/m^3) 2nd High		1.0 Maximum	25 2nd High	25 Maximum	512 2nd High	None		256 2nd High
	1-hr	75 ppb (196 ug/m^3) See Note (4)	None		None	None	7.8 Maximum	None	None		196 Maximum
Nitrogen Dioxide (NO_2)	Annual	53 ppb (100 ug/m^3) Maximum	53 ppb (100 ug/m^3) Maximum	40	0.1 Maximum	2.5 Maximum	1.0 Maximum	25 Maximum	14 Maximum	40	12.5 Maximum
	1-hr	100 ppb 188 ug/m^3 See Note (5)	None		None	None	10 Maximum	None	None		188 Maximum
Ozone	8-hr	0.08 ppm See Note (6)	0.08 ppm See Note (6)	VOC - 40 NO_x - 40	None	None	None	None	None	Not Applicable	Not Applicable
	8-hr	0.075 ppm See Note (6)	0.075 ppm See Note (6)	VOC - 40 NO_x - 40	None	None	None	None	None	Not Applicable	Not Applicable
Carbon Monoxide (CO)	8-hr	9 ppm (10,000 ug/m^3) 2nd High	None	100	1 Maximum	None	500 Maximum	None	575 Maximum	100	2,500 2nd High
	1-hr	35 ppm (40,000 ug/m^3) 2nd High	None		None	None	2,000 Maximum	None	None		10,000 2nd High
Lead (Pb)	Rolling 3-Month	0.15 ug/m^3 Maximum	0.15 ug/m^3 Maximum	0.6	None	None	None	None	0.1 3-month average	0.6	0.0375 Maximum
Ohio Air Toxics (OAC 3745-114-01)	1-hr									1	MAGLC Air Toxic Policy Maximum See Note (7)

*Greenhouse Gases (GHGs): This table does not address PSD permitting requirements for new sources of GHG emissions or for PCCMOs that cause increases in GHG emissions at existing sources. GHGs are not subject to AQ modeling requirements. The PSD permitting provisions for GHG emissions are set forth at OAC rule 3745-31-34.

Last Updated: 11/13/2013

Legend:

NAAQS = National Ambient Air Quality Standards

PSD = Prevention of Significant Deterioration (applicable to new major stationary sources and major modifications of existing major stationary sources in NAAQS attainment and unclassifiable areas)

NNSR = Non-Attainment New Source Review (applicable to new major stationary sources of nonattainment pollutant emissions and major modifications of existing major stationary sources of nonattainment pollutants in NAAQS non-attainment areas)

PCCMO = Physical Change or Change in the Method of Operation = The types of changes that trigger PSD or NNSR if they cause a "significant emission increase" and a "significant net emissions increase". Routine maintenance, repair, and replacement, and use of alternative fuels or raw materials under certain circumstances are examples of things that are excluded from being deemed a PCCMO. See OAC rule 3745-31-01(JJJ)(5).

PSD and NNSR Significant Emission Rates = The annual emission increases from a PCCMO deemed to be "significant" for purposes of triggering PSD or NNSR applicability as a major modification of an existing major stationary source.
Note: The emission rates that cause an existing facility to be classified as a "major stationary source" for PSD and NSR applicability are 100 TPY and 250 TPY depending on the location of the facility, the air pollutant(s) emitted, and the EPA source category classification. The definition of "major stationary source" is found in OAC rule 3745-31-01(LLL). [See also: the definition of "major stationary source" or NNSR applicability in 40 CFR 52.21(b)(1) and the definition of "major stationary source" for NNSR applicability in 40 CFR 51.165(a)(1)(iv)(A)].
A PCCMO at an existing minor source that itself causes emissions to increase above the applicable 100 TPY and 250 TPY "major" source threshold is a significant emission increase for purposes of triggering the PSD and NNSR requirements for major modifications.
If a new major stationary source is subject to PSD for one air pollutant, it is subject to PSD for all other PSD-regulated air pollutants that exceed a Significant Emission Rate.

SIL = Significant Impact Level = If the off-site air quality impact from a project is less than these amounts, the project may, at the discretion of the Director, be presumed to not interfere with NAAQS attainment or PSD increment consumption and not require interactive modeling with other sources.

PSD Increments = The maximum deterioration of air quality allowed from PSD projects in NAAQS attainment and unclassifiable areas.

PSD Monitoring De Minimis Concentrations = If the off-site air quality impact from a project is less than these amounts, the project may not be required to perform pre-construction air quality monitoring.

Ohio EPA Significant Emission Rates for AQ Modeling = The annual emissions rates from a project that trigger air quality modeling for projects that are not subject to PSD and/or NNSR.

Ohio EPA Generally Acceptable Incremental Impact = The maximum off-site air quality impact from a proposed new facility or modification of an existing facility that Ohio EPA generally considers acceptable without further analysis. The Ohio EPA can authorize a project that has air quality impacts that exceed these amounts when additional supporting information/data are provided by an applicant.

Notes:

(1) The 3-year average of the weighted annual mean $PM_{2.5}$ concentrations (Requires Post Processor).
(2) The 3-year average of the 98th percentile of 24-hr $PM_{2.5}$ concentrations (Requires Post Processor).
(3) The standard is attained when the expected number of days per calendar year with a 24-hr average concentration above 150 ug/m^3 is equal to or less than one day, averaged over three years.
(4) The 3-year average of the 99th percentile of the daily maximum 1-hr average SO_2 concentration at each monitor within an area (Requires Post Processor).
(5) The 3-year average of the 98th percentile of the daily maximum 1-hr average NO_2 concentration (Requires Post Processor).
(6) The 3-year average of the fourth-highest daily maximum 8-hr average ozone concentrations (Requires Post Processor).
(7) Value calculated by procedures outlined in the Ohio EPA Division of Air Pollution Control document entitled "Review of New Sources of Air Toxic Emissions - Option A"

References:

A - The Ohio air quality standards are found in OAC rule 3745-25-02. [See also: 40 CFR Part 50].
Note: OAC rule 3745-25-02 has not been revised to include the 12 ug/m^3 annual $PM_{2.5}$ NAAQS. In addition, the primary 24-hr and annual SO_2 air quality standards no longer apply in areas designated attainment for the 1-hr SO2 air quality standard. [See 40 CFR 50.4(e)].

B - The Ohio significant emission rates are found in OAC rule 3745-31-01(MMMMM) [See also: 40 CFR 52.21 (b)(23)(i) and 40 CFR 51.165 (a)(1)(x)(A)].
Note: The state and federal PSD rules also include significant emission rates for fluorides, sulfuric acid mist, total reduced sulfur (TRS), hydrogen sulfide, reduced sulfur compounds (RSC), municipal waste combustor organics, metals and acid gases, and non-methane organic compounds from MSW landfills. The significance threshold is "any emission rate" above zero for PSD regulated air pollutants for which an emission rate is not specified. [See OAC rule 3745-31-01(MMMMM)(2) and 40 CFR 52.21(b)(23)(ii)].

C - The numerical values presented in this table are concentrations at or below which, at the discretion of the Director, are normally presumed to not interfere with NAAQS attainment or PSD increment consumption.
The PM_{10}, SO_2 and NO_2 Class I SILs presented in this table are based on the US EPA's July 23, 1996 Proposed Rulemaking (61 FR 38249).
The Class I SIL for CO presented in this table is from Table C-4 of US EPA's DRAFT New Source Review Workshop Manual (October 1990). A footnote to Table C-4 states "an impact of 1 ug/m^3 on a 24-hour basis is significant" for Class I areas.
The PSD Class I SIL for $PM_{2.5}$ presented in this table is found in 40 CFR 52.21(k)(2).
Note: The appropriate Federal Land Manager(s) will also review all Class I PSD air quality impact modeling issues.

D - The Ohio PSD increments are found in OAC rule 3745-31-11(B) [See also: 40 CFR 52.21 (c)].

E - The numerical values presented in this table are concentrations at or below which, at the discretion of the Director, are normally presumed to not interfere with NAAQS attainment or PSD increment consumption.
The PSD Class II SILs for SO_2 (annual, 24-hr and 3-hr), PM_{10} (annual and 24-hr), NO_x (annual) and CO (8-hr and 1-hr) presented in this table are found in Table C-4 of US EPA's DRAFT New Source Review Workshop Manual (October 1990)
The same SILs are found in 40 CFR 51.165(b)(2) for non-attainment areas.
The PSD Class II SIL for $PM_{2.5}$ presented in this table is found in 40 CFR 52.21(k)(2).
The 1-hr SO_2 Class II SIL is an interim standard based on the August 23, 2010 US EPA Memo from Stephen D. Page to the Regional Air Division Directors.
The 1-hr NO_2 Class II SIL is an interim standard adopted by Ohio EPA based on the NESCAUM recommendation of 10 ug/m^3. This differs slightly from the recommendation in the June 28, 2010 US EPA Memo from Anna Marie Wood to the Regional Air Division Directors.

F - The Ohio EPA PSD pre-construction monitoring de minimis concentrations are found in OAC rule 3745-31-13(H). [See also: 40 CFR 52.21(i)(5)(i)].
Note: The state and federal rules also include de minimis concentrations for fluorides, total reduced sulfur (TRS), hydrogen sulfide, and reduced sulfur compounds (RSC).

G - The Ohio Modeling Significant Emission Rates and the Ohio Acceptable Incremental Impact are found in Ohio EPA Engineering Guide No. 69.