TENTATIVE AGENDA AND MINIBOOK
STATE AIR POLLUTION CONTROL BOARD MEETING
MONDAY, DECEMBER 15, 2008
AND
TUESDAY, DECEMBER 16, 2008

CONVENE REGULAR BUSINESS MEETING ON
MONDAY, DECEMBER 15, 2008 AT 9:30 A.M. IN
HOUSE ROOM C
GENERAL ASSEMBLY BUILDING
9TH & BROAD STREETS
RICHMOND, VIRGINIA

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ADJOURN REGULAR BUSINESS MEETING

CONVENE PLANNING SESSION ON
TUESDAY, DECEMBER 16, 2008 AT 9:30 A.M. IN
2ND FLOOR CONFERENCE ROOM
DEPARTMENT OF ENVIRONMENTAL QUALITY

629 EAST MAIN STREET
RICHMOND, VIRGINIA

Mercury Study Report Dowd

Planning Session

NOTE: The Board reserves the right to revise this agenda without notice unless prohibited by law. Revisions to the agenda include, but are not limited to, scheduling changes, additions or deletions. Questions on the latest status of the agenda should be directed to Cindy M. Berndt at (804) 698-4378.
PUBLIC COMMENTS AT STATE AIR POLLUTION CONTROL BOARD MEETINGS: The Board encourages public participation in the performance of its duties and responsibilities. To this end, the Board has adopted public participation procedures for regulatory action and for case decisions. These procedures establish the times for the public to provide appropriate comment to the Board for their consideration.
For REGULATORY ACTIONS (adoption, amendment or repeal of regulations), public participation is governed by the Administrative Process Act and the Board's Public Participation Guidelines. Public comment is accepted during the Notice of Intended Regulatory Action phase (minimum 30-day comment period and one public meeting) and during the Notice of Public Comment Period on Proposed Regulatory Action (minimum 60-day comment period and one public hearing). Notice of these comment periods is announced in the Virginia Register and by mail to those on the Regulatory Development Mailing List. The comments received during the announced public comment periods are summarized for the Board and considered by the Board when making a decision on the regulatory action.
For CASE DECISIONS (issuance and amendment of permits), the Board adopts public participation procedures in the individual regulations which establish the permit programs. As a general rule, public comment is accepted on a draft permit for a period of 30 days. If a public hearing is held, there is usually a 45-day comment period and one public hearing.
In light of these established procedures, the Board accepts public comment on regulatory actions and case decisions, as well as general comments, at Board meetings in accordance with the following:
REGULATORY ACTIONS: Comments on regulatory actions are allowed only when the staff initially presents a regulatory action to the Board for final adoption. At that time, those persons who participated in the prior proceeding on the proposal (i.e., those who commented at the public hearing or commented during the public comment period) are allowed up to 3 minutes to respond to the summary of the comments presented to the Board. Adoption of an emergency regulation is a final adoption for the purposes of this policy. Persons are allowed up to 3 minutes to address the Board on the emergency regulation under consideration.
CASE DECISIONS: Comments on pending case decisions at Board meetings are accepted only when the staff initially presents the pending case decision to the Board for final action. At that time the Board will allow up to 5 minutes for the applicant/owner to make his complete presentation on the pending decision, unless the applicant/owner objects to specific conditions of this permit. In that case, the applicant/owner will be allowed up to 15 minutes to make his complete presentation. The Board will then allow others who commented during the prior proceeding (i.e., those who commented at the public hearing or during the public comment period) up to 3 minutes to exercise their right to respond to the summary of the prior proceeding presented to the Board. No public comment is allowed on case decisions when a FORMAL HEARING is being held.
POOLING MINUTES: Those persons who commented during the public hearing or public comment period and attend the Board meeting may pool their minutes to allow for a single presentation to the Board that does not exceed the time limitation of 3 minutes times the number of persons pooling minutes or 15 minutes, whichever is less.
NEW INFORMATION will not be accepted at the meeting. The Board expects comments and information on a regulatory action or pending case decision to be submitted during the established public comment periods. However, the Board recognizes that in rare instances new information may become available after the close of the public comment period. To provide for consideration of and ensure the appropriate review of this new information, persons who participated during the prior public comment period shall submit the new information to the Department of Environmental Quality (Department) staff contact listed below at least 10 days prior to the

Board meeting. The Board's decision will be based on the Department-developed official file and discussions at the Board meeting. For a regulatory action should the Board or Department decide that the new information was not reasonably available during the prior public comment period, is significant to the Board's decision and should be included in the official file, an additional public comment period may be announced by the Department in order for all interested persons to have an opportunity to participate.
PUBLIC FORUM: The Board schedules a public forum at each regular meeting to provide an opportunity for citizens to address the Board on matters other than pending regulatory actions or pending case decisions. Anyone wishing to speak to the Board during this time should indicate their desire on the sign-in cards/sheet and limit their presentation to not exceed 3 minutes.
The Board reserves the right to alter the time limitations set forth in this policy without notice and to ensure comments presented at the meeting conform to this policy.
Department of Environmental Quality Staff Contact: Cindy M. Berndt, Director, Regulatory Affairs, Department of Environmental Quality, 629 East Main Street, P.O. Box 1105, Richmond, Virginia 23218, phone (804) 698-4378; fax (804) 698-4346; e-mail: cmberndt@deq.virginia.gov.

Open Burning (9VAC5-130, Rev.L08) – Request for Board Action on Exempt Final Regulation: This regulatory action will re-codify the open burning regulations under a new chapter, 130. This is being done to assist the public and local governments in locating provisions more easily. Currently, the provisions are embedded in the existing source regulations in Chapter 40 and are difficult for the public to locate. Article 40 of Chapter 40 is being repealed and an entire new chapter, 130, is being established. The Department is requesting approval of draft final regulation amendments that meet federal statutory and regulatory requirements. Approval of the amendments will ensure that the provisions for open burning will be easier to locate and thus provide for improved implementation and compliance with the provisions. This could also lead to reducing necessary enforcement actions of the provisions.

Because the state regulations consist only of changes in style or form or corrections of technical errors, the state regulations are exempt from the standard regulatory process (Article 2 (§ 2.2-4006 et seq.) of the Administrative Process Act) by the provisions of § 2.2-4006 A 3 of the Administrative Process Act. However, notice of the regulation adoption must be forwarded to the Registrar for publication in the Virginia Register 30 days prior to the effective date. Also, the Registrar must agree that the regulations are not materially different from the federal version and are, therefore, exempt from the standard regulatory adoption process and must notify the agency accordingly. This notification and the notice of adoption will be published in the Virginia Register subsequently. Further, in adopting the regulation amendments under the provisions of § 2.2-4006, the board is required to state that it will receive, consider, and respond to petitions by any interested person at any time with respect to reconsideration or revision.

Notice that the regulation would be considered by the board and that public comment would be accepted at the board meeting in accordance with the board's policy on public comment at board meetings was provided to the public by posting of the board's agenda to the Virginia Regulatory Town Hall and DEQ web site. In addition, email notification was provided to those persons signed up to receive notifications of board meetings through the Town Hall website.

Below is a brief summary of the substantive amendments the Department is recommending be made to the regulation:

1. Establish the "Emission Standards for Open Burning" as the "Regulation for Open Burning" in a new chapter, 130.
2. Delete the existing "Open Burning Rule" (Rule 4-40) located in Article 40, Chapter 40.

CAIR Emissions Trading Program (9 VAC 5 Chapter 140, Rev. K07) – Request for Board Action on Exempt Final Regulation: By letter of September 12, 2007, EPA Region III notified DEQ of the results of a review of the CAIR provisions of 9 VAC 5 Chapter 140, submitted as a SIP revision by the Commonwealth of

Virginia on April 30, 2007, to determine whether the regulations are consistent with the requirements of the federal CAIR program. In that letter, EPA identified several areas of concern that might cause confusion in the interpretation of the proposed regulatory language and indicated that corrections needed to be made for EPA approval of the program. By letter of September 17, 2007 from the DEQ to EPA, Region III, DEQ stated that it concurred with EPA interpretations of certain aspects of the regulations and committed to correcting those issues as soon as practicable.

On October 19, 2007 (72 FR 59190), EPA took final action to revise the definition of a cogeneration unit under the Clean Air Interstate Rule (CAIR) so that most units co-firing biomass will be exempt from the rule. EPA also made several other technical amendments to CAIR.

The Department is requesting approval of draft final regulation amendments that meet federal statutory and regulatory requirements. Approval of the amendments will ensure that the Commonwealth will be able to meet its obligations under the federal Clean Air Act.

Because the state regulations are necessary to meet the requirements of the federal Clean Air Act and do not differ materially from the pertinent U.S. Environmental Protection Agency (EPA) regulations, the state regulations are exempt from the standard regulatory adoption process (Article 2 (§ 2.2-4006 et seq.) of the Administrative Process Act) by the provisions of § 2.2-4006 A 4 c of the Administrative Process Act. However, notice of the regulation adoption must be forwarded to the Registrar for publication in the Virginia Register 30 days prior to the effective date. Also, the Registrar must agree that the regulations are not materially different from the federal version and are, therefore, exempt from the standard regulatory adoption process and must notify the agency accordingly. This notification and the notice of adoption will be published in the Virginia Register subsequently. Further, in adopting the regulation amendments under the provisions of § 2.2-4006, the Board is required to state that it will receive, consider, and respond to petitions by any interested person at any time with respect to reconsideration or revision.

Notice that the regulation would be considered by the board and that public comment would be accepted at the board meeting in accordance with the board's policy on public comment at board meetings was provided to the public by posting of the board's agenda to the Virginia Regulatory Town Hall and DEQ web site. In addition, email notification was provided to those persons signed up to receive notifications of board meetings through the Town Hall website.

Below is a brief summary of the substantive amendments the Department is recommending be made to the regulations.

1. The definitions of "CAIR NOx Annual Trading Program", "CAIR NOx Ozone Season Trading Program", "CAIR SO_2 Trading Program", and "Permitting authority" in 9 VAC 5-140-1020, 9 VAC 5-140-2020, and 9 VAC 5-140-3020 have been amended to clarify that they are not intended to create trading programs only for sources geographically located within the borders of the Commonwealth of Virginia. Therefore, qualifying sources within the Commonwealth are to become full participants in the EPA-administered regional CAIR trading programs for annual NOx, ozone season NOx, and annual SO_2, along with sources permitted by authorities in all other States that are participating in the regional CAIR trading programs. The new language clarifies that the regulations should not be interpreted to limit the trading program to Virginia sources, which would be contrary to the intention that sources covered by other States' approved CAIR rules or by the CAIR FIP may trade allowances with sources in the Commonwealth. In addition, the provisions of 9 VAC 5-140-1010, 9 VAC 5-140-2010, and 9 VAC 5-140-3010 have been amended to reflect this clarification.

2. The definition of "Most stringent state or federal NOx emissions limitation" in 9 VAC 5-140-1020, 9 VAC 5-140-2020, and 9 VAC 5-140-3020 has been amended to clarify that the primary fuel, where it is not designated in the permit, is the fuel that would result in the lowest emission rate.

3. The definition of "Cogeneration unit" in 9 VAC 5-140-1020, 9 VAC 5-140-2020, and 9 VAC 5-140-3020 has been amended so that most units co-firing biomass will be exempt from CAIR. Specifically, the calculation methodology has been removed for the efficiency standard in the cogeneration unit definition to exclude energy input from biomass making it more likely that units co-firing biomass will be able to meet the

efficiency standard and qualify for exemption from the rule. In these same sections, technical amendments were made to add a new definition of "Biomass" and revise the definition of "Total energy input".

Ambient Air Quality Standards (9VAC5-30, Rev. D08) - Request for Board Action on Exempt Final Regulation: On March 27, 2008 (73 FR 16436), EPA issued a regulation revising the ozone national ambient air quality standard (NAAQS) by adding an 8-hour standard at a level of 0.075 parts per million (ppm). The existing 8-hour standard of 0.08 ppm was not revoked. An area's compliance with the 8-hour standard is measured by the 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area. The new primary standard became effective on May 27, 2008.

Chapter 30 contains the ambient air quality standards for the specific criteria pollutant standards set out in 40 CFR Part 50. Therefore, this chapter is the action effectively implementing the EPA requirements.

The department is requesting approval of draft final regulation amendments that meet federal statutory and regulatory requirements. Approval of the amendments will ensure that the Commonwealth will be able to meet its obligations under the federal Clean Air Act.

Because the state regulations are necessary to meet the requirements of the federal Clean Air Act and do not differ materially from the pertinent U.S. Environmental Protection Agency (EPA) regulations, the state regulations are exempt from the standard regulatory adoption process (Article 2 (§ 2.2-4006 et seq.) of the Administrative Process Act) by the provisions of § 2.2-4006 A 4 c of the Administrative Process Act. However, notice of the regulation adoption must be forwarded to the Registrar for publication in the Virginia Register 30 days prior to the effective date. Also, the Registrar must agree that the regulations are not materially different from the federal version and are, therefore, exempt from the standard regulatory adoption process and must notify the agency accordingly. This notification and the notice of adoption will be published in the Virginia Register subsequently. Further, in adopting the regulation amendments under the provisions of § 2.2-4006, the board is required to state that it will receive, consider, and respond to petitions by any interested person at any time with respect to reconsideration or revision.

Notice that the regulation would be considered by the board and that public comment would be accepted at the board meeting in accordance with the board's policy on public comment at board meetings was provided to the public by posting of the board's agenda to the Virginia Regulatory Town Hall and DEQ web site. In addition, email notification was provided to those persons signed up to receive notifications of board meetings through the Town Hall website.

SUMMARY OF AMENDMENTS TO REGULATION:
1. References to 40 CFR Part 50 appendices have been added to the federal documents incorporated by reference list, and a number of corrections and updates have been made. [9VAC5-20-21, page 2]
2. A new section for the 0.075 ppm 8-hour ozone standard has been added. [9VAC5-30-55, page 11]
3. A minor typographical error has been corrected. [9VAC5-30-65, page 12]

Federal Documents Incorporated by Reference (Rev. I08) - Request for Board Action on Exempt Final Regulation: The purpose of the proposed action is to amend the regulations to incorporate newly promulgated federal New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and national emission standards for hazardous air pollutants for source categories (Maximum Achievable Control Technology, or MACT), Rules 5-5, 6-1, and Rule 6-2, respectively, of the board's regulations.

The board needs to incorporate newly promulgated NSPS, NESHAP, and MACT standards in order for the department to obtain authority from the U.S. Environmental Protection Agency (EPA) to enforce these standards. If the board does not do so, authority to enforce the standards remains with the federal government.

Further, the standards reflect the most current technical research on the subjects addressed by the standards. To continue to follow the old standards would mean relying on inaccurate and outdated information.

The department is requesting approval of draft final regulation amendments that meet federal statutory and regulatory requirements. Approval of the amendments will ensure that the Commonwealth will be able to meet its obligations under the federal Clean Air Act.

Because the state regulations are necessary to meet the requirements of the federal Clean Air Act and do not differ materially from the pertinent U.S. Environmental Protection Agency (EPA) regulations, the state regulations are exempt from the standard regulatory adoption process (Article 2 (§ 2.2-4006 et seq.) of the Administrative Process Act) by the provisions of § 2.2-4006 A 4 c of the Administrative Process Act. However, notice of the regulation adoption must be forwarded to the Registrar for publication in the Virginia Register 30 days prior to the effective date. Also, the Registrar must agree that the regulations are not materially different from the federal version and are, therefore, exempt from the standard regulatory adoption process and must notify the agency accordingly. This notification and the notice of adoption will be published in the Virginia Register subsequently. Further, in adopting the regulation amendments under the provisions of § 2.2-4006, the board is required to state that it will receive, consider, and respond to petitions by any interested person at any time with respect to reconsideration or revision.

Notice that the regulation would be considered by the board and that public comment would be accepted at the board meeting in accordance with the board's policy on public comment at board meetings was provided to the public by posting of the board's agenda to the Virginia Regulatory Town Hall and DEQ web site. In addition, email notification was provided to those persons signed up to receive notifications of board meetings through the Town Hall website.

The regulation amendments update state regulations that incorporate by reference certain federal regulations to reflect the Code of Federal Regulations as published on July 1, 2008. Below is a list of the new standards the department is recommending be incorporated into the state regulations by reference:
1. No new NSPSs are being incorporated. Standards that are not being incorporated are listed with a note that enforcement of the standard rests with EPA. This is done for consistency with Article 1 of 9VAC5-60 (NESHAPs) and in order to make the rules more user-friendly. The date of the Code of Federal Regulations book being incorporated by reference is also being updated to the latest version.
2. No new NESHAPs are being incorporated. The date of the Code of Federal Regulations book being incorporated by reference is being updated to the latest version.
3. 13 new MACTs are being incorporated: Clay Ceramics Manufacturing Area Sources (Subpart RRRRRR, 40 CFR 63.11435-11447); Glass Manufacturing Area Sources (Subpart SSSSSS, 40 CFR 63.11448-11461); Secondary Nonferrous Metals Processing Area Sources (Subpart TTTTTT, 40 CFR 63.11462-11474); Hospital Ethylene Oxide Sterilizer Area Sources (Subpart WWWWW, 40 CFR 63.10382-10448); Electric Arc Furnace Steelmaking Facility Area Sources (Subpart YYYYY, 40 CFR 63.1068-10692); Iron and Steel Foundries Area Sources (Subpart ZZZZZ, 40 CFR 63.10880-10906); Gasoline Distribution Bulk Terminals, Bulk Plants, and Pipeline Facilities, Area Sources (Subpart BBBBBB ,40 CFR 63.11080-11100); Acrylic and Modacrylic Fibers Production Area Sources (Subpart LLLLLL, 40 CFR 63.11393-11399); Carbon Black Production Area Sources (Subpart MMMMMM, 40 CFR 63.11400-11406); Chemical Manufacturing Area Sources: Chromium Compounds (Subpart NNNNNN, 40 CFR 63.11407-63.11413); Flexible Polyurethane Foam Production and Fabrication Area Sources (Subpart OOOOOO, 40 CFR 63.11414-11420); Lead Acid Battery Manufacturing Area Sources (Subpart PPPPPP, 40 CFR 63.11421-11427); and Wood Preserving Area Sources (Subpart QQQQQQ, 40 CFR 63.11428-11434). Standards that are not being incorporated are listed with a note that enforcement of the standard rests with EPA. This is done for consistency with Article 1 of 9VAC5-60 (NESHAPs) and in order to make the rules more user-friendly. The date of the Code of Federal Regulations book being incorporated by reference is being updated to the latest version.

Major New Source Review, Combining Permits (9VAC5-80, Rev. C08) - Request to Publish Proposal for Public Comment and Use the Fast Track Process: The regulations of the board establish a new source review (NSR)

permit program whereby owners of sources locating in prevention of significant deterioration (PSD) and nonattainment areas are required to obtain a permit prior to construction of a new facility or expansion to an existing one. The regulations are being amended in order to allow the terms and conditions of the various elements of the NSR program to be combined into a single permit. The provisions that provide an exemption for the use of alternate fuels are also being updated as required by state law.

The department is requesting approval of a proposal for public comment that meets federal and state statutory and regulatory requirements. Approval of the proposal will contribute to the protection of the health and welfare of citizens because it will (i) make issuance of NSR permits more effective and efficient, (ii) clarify understanding of the permitting process; (iii) make the permitting process more transparent, and (iv) redirect limited department resources to issues of greater concern to the public.

The department did not issue a notice of intended regulatory action nor conduct any associated public participation activities because we are requesting that the board adopt the amendments as final regulations provided they complete the fast-track rulemaking process as provided in the Code of Virginia. Under the provisions of §2.2-4012.1 of the Administrative Process Act, agencies may use the fast-track rulemaking process for regulations that are expected to be noncontroversial. The reasons for using the fast-track rulemaking process may be found in the agency background document.

Under the fast-track process, the proposal will still be subject to a 30-day public comment period. If an objection to the use of the fast-track process is received within the 30-day public comment period from 10 or more persons, any member of the applicable standing committee of either house of the General Assembly or of the Joint Commission on Administrative Rules, the department will (i) file notice of the objection with the Registrar of Regulations for publication in the Virginia Register and (ii) proceed with the normal promulgation process with the initial publication of the fast-track regulation serving as the Notice of Intended Regulatory Action. Otherwise, the regulation becomes effective 15 days after the end of the public comment period.

SUMMARY OF DRAFT REGULATION AMENDMENTS:
1. Provisions have been added to allow the terms and conditions of the various elements of the NSR program to be combined into a single permit. [9VAC5-80-1625, pages 25-26; 9VAC5-80-1915, pages 30-33; 9VAC5-80-2020, pages 59-60; 9VAC5-80-2140, page 62; 9VAC5-80-2195, pages 62-64]
2. Provisions which specify the NSR programs to be used for the issuance of a PAL permits have been revised in order to limit the issuance of these permits via a state operating permit. [9VAC5-80-1615, page 20; 9VAC5-80-1915, page 31; 9VAC5-80-2010, page 55; 9VAC5-80-2140, page 62]
3. Provisions which provide certain exemptions related to the use of alternative fuels or raw materials have been updated to comply with recent amendments to § 10.1-1322.4 of the Code of Virginia and restructured to ensure no conflict with federal law or regulation. [9VAC5-80-1615, pages 13-14; 9VAC5-80-1695 page 30; 9VAC5-80-2010, page 49]

Minor New Source Review (9 VAC 5 Chapter 80, Rev. H05) - Regulation Development Report and Request to Publish Proposal for Public Comment: On May 21, 2002, the Board adopted a major revision to the minor NSR program. The new Article 6 became effective on September 1, 2002 in order to provide a period to train the Department staff. The 2002 adoption reflected a major revision to the minor NSR program. The evolution of 9 VAC 5-80-10 and 11 to Article 6 of Part II of 9 VAC 5 Chapter 80 resulted in several major changes being made to the program enabling regulation. One of these changes was to convert from a permit applicability approach that looks at the sum of emissions increases from each individual emissions unit affected by a physical or operational change at an existing stationary source to determine permit applicability to an approach which looks at emissions increases and decreases from all of the changes from a source-wide perspective (i.e. “netting”) to determine permit applicability. The basis for the determination of applicability was changed to consider all of the emissions changes at the emissions units due to or directly resultant from the physical or operational change at the existing source. The emissions basis (the difference between the source's pre-change and postchange emissions) for permit applicability was also changed from uncontrolled emissions to actual emissions from all of the changes due to or directly resultant from the physical or operational changes.

While the netting concept, essential to determining applicability, works well in major NSR, it is not working in minor NSR, primarily due to the lack of an underlying permit program to make the netting operations enforceable.

Implementation of the new regulation has placed a significant burden upon the Department staff. Under the new regulation, determination of permit and BACT applicability cannot be made with any reasonable degree of efficiency, effectiveness or consistency. Interpreting the new regulation is a major time-consuming workload for the Department. The preferred and simplest course of action is to eliminate the netting concept and return the regulation to its previous applicability and BACT determination structure that is currently in the EPA-approved SIP.

In Chapter 282, 2008 Acts of Assembly, the legislature directed the board to adopt amendments to Article 6 to return the emissions basis (the difference between the source's pre-change and postchange emissions) for permit applicability from a net emissions increase based upon actual emissions to one based upon annual uncontrolled emission rates. The board adopted the required amendments at the October 23, 2009 board meeting.

The Department is requesting approval of a proposal for public comment that meets federal statutory and regulatory requirements. Approval of the proposal will ensure that the Commonwealth will be able to meet its obligations under the federal Clean Air Act, as well as, ensuring that the minor NSR Program will be in compliance with the Code of Virginia.

PUBLIC PARTICIPATION ACTIVITIES

1. To solicit comment from the public on the notice of intended regulatory action, the Department issued a notice that provided for receiving comment during a comment period and at a public meeting.
2. To assist in the development of the proposal, the Department formed an ad hoc advisory group consisting of representatives from the general public, environmental groups, industry, the EPA regional office, and Department staff (both the central and regional offices). Information gathered from the federal statutes, regulations and policies, its own analysis and input from the advisory group forms the basis for the Department recommendation.

SUMMARY OF DRAFT REGULATION AMENDMENTS:

1. The program is being changed to convert from a permit applicability approach which looks at the net emissions increase due to or directly resultant from the physical or operational changes from all affected units in the project, back to an approach that only looks at emissions increases from new, modified or replacement emissions units in the project to determine applicability. Currently applicability is based on the net emissions increase based on all the source wide emissions changes due to or directly resultant from the physical or operational change. The proposed program will base permit applicability on the emissions from only those emissions units that are affected by the physical or operational change at the project. Debottlenecked emissions (collateral emissions increases and decreases from unchanged processes and equipment) and all emissions decreases from affected emissions units will no longer be considered in determining permit applicability.
2. The program is being changed such that Best Available Control Technology will be applied to all emissions units that become subject to the minor new source review program, and the current minimum net emissions increase applicability thresholds for individual affected emissions units will be eliminated. Restrictions on the proportion of the potential emissions reductions that may be considered for the BACT cost-benefit analysis will also be removed and BACT will be evaluated for each pollutant emitted by the affected emissions units.
3. The program is being changed to add definitions and other provisions that will facilitate the clear identification of the emissions units subject to permit program (i.e., affected units). For a “new stationary source,” the affected emissions units will be all emissions units located to an undeveloped site. For a “project” at an existing stationary source, the affected emissions units will be all new or added emissions units and all modified emissions units that make up the project.
4. The program is being changed such that reconstruction of an emissions unit by the replacement of some of its components will no longer be treated differently from the modification of an emissions unit. Such changes will

no longer be exempt if the potential to emit is not increased, but instead will only be exempt if the increase in the emissions rate is less than the exempt emission rates for a modified stationary source, just like any other modified emissions unit. Reconstruction of an emissions unit by replacing the entire emissions unit will continue to be exempt as a "replacement of an emissions unit" as long as the potential to emit does not increase as a result of that replacement. Reconstruction will only exist in the minor new source review program as it pertains to its applicability under the federal new source performance standards in 40 CFR Part 60.

5. The program is being changed such that certain transportable engines will no longer be considered as nonroad engines that are excluded from the definition of a stationary source. Emissions from such engines may now be subject to the provisions of the minor new source review program and subject to emissions control requirements.

6. The exemption for certain sized fuel burning equipment is being changed to (i) expand the exemption to include space heaters, (ii) reduce the maximum exemption size for natural gas-fired fuel burning equipment, and (iii) in ozone nonattainment and maintenance areas, aggregate similar types of fuel burning equipment that are included in a single project for the purpose of comparison with the exempt size criteria.

7. Exemptions are being added for (i) vegetative waste recycling/mulching operations, (ii) open pit incinerators subject to the open burning rule, and (iii) certain process testing and remediation projects that remain in existence for less than a year.

8. The program is being changed to remove the prohibition against exempting NSPS facilities.

9. Provisions are being added to provide for processing and issuing informational permit applicability determinations.

10. The provisions covering permits for sources subject to the federal hazardous air pollutant new source review program are being restructured to increase clarity.

11. Provisions are being added to allow terms and conditions of permits to be combined.

REPORT TO THE STATE AIR POLLUTION CONTROL BOARD CONCERNING HIGH PRIORITY VIOLATORS (HPVs) FOR THE FOURTH QUARTER, 2008

DEQ Region	Facility	Brief Description	Status
TRO	Hampton University Hampton, Virginia Hampton City Registration No. 60106	**Discovery date** - 12/6/07 **Alleged violations:** The opacity violation was due to a boiler malfunction.	**NOV** - Issued 1/28/08 **CO** *- In Development* **Additional Information:** DEQ is negotiating with the facility.
TRO	US Navy - Norfolk Naval Shipyard Portsmouth, Virginia Portsmouth City Registration No. 60326	**Discovery date** - 4/3/08; **Alleged violations:** The violations involve incorrect Volatile Organic Compounds calculations and record keeping as required by the National Emission Standards for Shipbuilding and Ship Repair (MACT Subpart II).	**NOV** - Issued 6/30/08 **CO** *- In Development* **Additional Information:** The emission calculations and record keeping requirements were corrected. DEQ is negotiating the Order with the facility.
PRO	Kaiser Aluminum Fabricated Products LLC Richmond, Virginia Chesterfield County Registration No. 50249	**Discovery date** - 6/12/08 **Alleged violations:** The facility failed to submit the annual Title V certification.	**NOV** - Issued 6/20/08 **CO** *- In Development* **Additional Information:** DEQ is negotiating with the facility.
NRO	Dupont Fabros (Rhino Interest LLC formerly Eden Ventures LLC) Ashburn, Virginia Loudoun County Registration No. 73322	**Discovery date** - 1/11/07 **Alleged violations:** 1. NOx exceedance, 2. Failure to calculate emissions, 3. Failure to maintain records, 4. Failure to conduct follow-up stack test, and 5. Failure to operate emergency generators with appropriate control equipment (SCR – Selective Catalytic Reduction)	**NOV** - Issued 3/13/07 **CO** - Executed 8/6/08 **Civil Penalty** – Total charged assessed was $500,000.00 paid on 9/2/08 (This is the total penalty for all three of the Dupont Fabros Facilities). **Compliance Milestones:** 11/5/08 – submit EMS Plan to DEQ and conduct stack testing. *12/22/08 – submit stack test results to DEQ.* **Additional Information:** In October 2007, the corporate structure changed and placed the three separate LLCs under the Dupont Fabros umbrella. A single Consent Order was issued

			for all three facilities. Appendix A of the Order required a fourth facility (Fox Properties LLC) to submit their construction/installation schedule by 10/6/08.
	Dupont Fabros Technology Ashburn Corporate Center (formerly Grizzly Ventures LLC) Ashburn, Virginia Loudoun County Registration No. 73370	**Discovery date** - 9/7/07 **Alleged violations:** 1. Stationary source construction prior to permit, 2. Stationary source operation prior to permit, and 3. Failure to provide start-up notice. **Alleged violation for 2nd NOV** 4. Failure to complete initial compliance testing	**NOV** - Issued 10/5/07 **2nd NOV** - Issued 11/28/07 **CO** - Executed 8/6/08 **Civil Penalty** - Total charged assessed was $500,000.00 paid on 9/2/08 (This is the total penalty for all three of the Dupont Fabros Facilities). **Compliance Milestones:** 11/5/08 – submit EMS Plan to DEQ and conduct stack testing. *12/22/08 – submit stack test results to DEQ.*
	Dupont Fabros (formerly Porpoise Ventures LLC) Gainesville, Virginia Prince William County Registration No. 73180	**Discovery date** - 8/21/07 **Alleged violation:** 1. The facility operated the emergency generators contrary to its permit application by operating in non-emergency periods, under a load curtailment agreement with the Northern Virginia Electrical Cooperative, 2. Failure to conduct performance testing, 3. Exceedance of annual emission limits for carbon monoxide, Volatile Organic Compounds, PM-10, and sulfur dioxide, 4. Operational violations, and 5. Record keeping and reporting violations.	**NOV** - Issued 10/19/07 **CO** - Executed 8/6/08 **Civil Penalty** - Total charged assessed was $500,000.00 paid on 9/2/08 (This is the total penalty for all three of the Dupont Fabros Facilities). **Compliance Milestones:** 10/6/08 – submit schedule for installation and startup 11/5/08 – submit EMS Plan to DEQ *3/1/09 - install SCR and conduct testing on units used for alternate power generation purposes.*

PRO	Hawkeye Manufacturing, Inc Richmond, Virginia Richmond City Registration No. 52158	**Discovery date** - 5/25/06 **Alleged violations:** 1. Began construction and operation of facility with out a permit, 2. Failed to register the facility with DEQ; 3. Failed to adequately control fugitive dust; VOC odor and 4. Failed to handle VOC materials adequately.	**NOV** - Issued 8/23/06 **CO** - Executed 7/2/08 **Civil Penalty** – *Total charge assessed is $87,560.00. SEP credit of $65,670.00 will result in payment of $21,890.00.* **SEP** - *The facility will develop an EMS. During the development of the EMS, the facility is required to submit quarterly status reports.* **Compliance Milestones:** 9/08 - Initial Auditor Selection *12/1/08 payment of $5,472.50* *1/1/09 payment of $5,472.50* *4/1/09 payment of $5,472.50* *5/09 Submit EMS Manual* *6/09 SEP follow-up* *7/1/09 payment of $5,472.50* *7/10 submit Audit Report* *9/10 Submit Corr. Measures / Action Plan* *Submit Action Plan and SEP Completion Certification* **Additional Information:** **(CURRENTLY ON EPA's WATCH LIST)**
PRO	Chaparral Virginia Inc. Petersburg, Virginia Dinwiddie County Registration No. 51264	**Discovery date** - 3/12/03 **Alleged violation:** The facility failed to operate the external combustion chamber in accordance with permit, resulting in CO emissions from the Electric Arc Furnace.	**NOV** - Issued 3/24/03 **CO** - Executed 1/13/04 **Civil Penalty** – Total charge assessed was $137,500.00 paid on 2/12/04 **Additional Information:** A failed stack test performed 12/2-9/01 resulted in a Consent Order and requirements to install and certify Continuous Emission Monitors and apply for a permit modification. An application for modification was submitted and deemed incomplete. Modeling data was submitted and approved. The application is now complete and being drafted.

PRO	Virginia Electric and Power Company (Dominion – Hopewell Power Station) Hopewell, Virginia Hopewell City Registration No. 51019	**Discovery date** - 9/6/07 **Alleged violations:** The 1&2 boilers malfunctioned resulting in excess SO2 with permit violations beginning on 4-7-07 through 6-26-07	**NOV** - Issued 11/1/07 **CO** - Executed 7/10/08 **Civil Penalty** - Total charge assessed was $41,966.00 paid on 7/28/08 **Compliance Milestones:** 8/8/08 – Submitted training documentation and daily grit-screen inspection program. The information is currently under review. 9/15/08 – Submitted TV Permit modification request for grit screens. **Additional Information:** *The facility is required (as per Appendix A of the Order) to perform daily evaluations of the grit screens and record findings. The screens shall be replaced every 31 (operational) days or sooner depending on wear. This practice will continue as required by the Order until the Title V Permit is amended.*
PRO	Georgia-Pacific Wood Products Jarrett, Virginia Greensville County Registration No. 50253	**Discovery date** - 9/10/07 **Alleged violations:** The facility is major for Hazardous Air Pollutants. During a stack-test for the boiler, the facility exceeded the Title V permit limit of 5.38 lb/hr for HCL.	**NOV** - Issued 12/14/07 **CO** - Executed 6/30/08 **Civil Penalty** – Total charge assessed was $7,300.00. SEP credit of $5,475.00 resulted in payment of $1,825.00 on 7/18/08 **SEP** – Purchase HAZMAT materials for Jarrett Volunteer Fire Department by 8/30/08 and submit monthly HCL values to DEQ until the issuance of the modified Title V permit. **Additional Information:** Testing was conducted on 9/18/07. HCL emissions were within appropriate limits. The PSD permit was modified on 5/15/08 and the Title V Permit was subsequently modified on 7/7/08. These permits include hydrogen chloride limits and a limit on the chlorine content in the coal.

SWRO	Consolidation Coal Co. – Buchanan Mine #1STP Mavisdale, Virginia Buchanan County Registration No. 10945	**Discovery date** - 4/23/08 - 7/22/08 **Alleged violations**: 1. The facility allegedly failed to perform the permit Visual Emission Observations requirements. **Alleged violation for 2nd NOV:** 2. The Venturi scrubber water supply pressure was below the value required by the permit. Subsequent data indicated that the violation had been on going for several months. Additionally, the operator failed to document and report an excursion.	**NOV** - Issued 6/6/08 **2nd NOV** - Issued 8/13/08 **CO** - Executed 10/31/08 **Civil Penalty** – *Total charge assessed was $9,581.00 and shall be paid by 11/30/08.*
VRO	O-N Minerals Chemstone Co. – Strasburg Strasburg, Virginia Shenandoah County Registration No. 80252	**Discovery date** – 8/27/07 **Alleged violations:** Failure to provide accurate test results for the Facility's Hydrator within the frequency required by the Title V permit. **Alleged violation for 2nd NOV:** The facility re-tested on 2/7/08. Results for PM exceeded the Title V permit emissions limit. ---------- **Discovery date** – 5/19/08 **Alleged violations:** SO2 values from testing the Rotary Kiln (conducted on 10/30/07) were 66.1 lbs/hr. That emissions rate corresponds to a PTE of 289.5 tons/yr and is above PSD significance levels. The facility does not have a PSD permit.	**NOV** -Issued 9/14/07 **CO** -Executed 2/1/08 **Civil Penalty** - Paid on 2/22/08 ($3,107.00) **2nd NOV** -Issued 3/18/08 **LOA** -Issued 7/8/08 allowed the facility the time needed to optimize the function of the scrubber and retest. **Compliance Milestones:** 9/15/08 – The facility will optimize scrubber for PM control on the Hydrator and conduct PM testing. *10/15/08 – Submit results of stack test – Results have been submitted and are in review.* ---------- **NOV** -Issued 6/3/08 **EPA NOV** - Issued 7/29/08 **Additional Information:** 8/21/08 – The facility conducted a second test on the rotary kiln. 9/24/08 - EPA met with the facility to discuss the NOV.

REQUEST FOR BOARD ACTION – PROPOSED MINOR NEW SOURCE REVIEW PERMIT - ADAMS CONSTRUCTION COMPANY – REGISTRATION NO. 81607 PORTABLE HOT MIX ASPHALT PLANT LOCATED IN ROCKBRIDGE COUNTY:

[NOTE: A complete copy of the material in the Board books is not duplicated in this document. The Board memorandum, revised proposed permit and the response to public comment documents are included. Below is a list of the material provided to the Board. Where a page number is shown the main document is included herein.]

1. Board Memorandum — Page 15
2. Revised Proposed Permit (November 2008) — Page 58
3. Response to Comments — Page 28
   - Technical Review of the Air Quality Analysis in Support of the Permit Application for Adams Construction Co. — Page 52
4. Public Participation Report
   - Memo to File
   - Participants in the Process
   - Issues Raised in Written Comments
   - Issues Raised in Oral Comments
   - Issues Raised in Petitions
   - Written Comments Received
   - Petitions Received
   - Audio File of Public Hearing (available upon request)
5. Engineering Evaluation for the Proposed Permit
   - Emission Calculations – Distillate Oil
   - Emission Calculations – Waste/Recycled Oil
   - Toxic Emissions Calculations
   - Site Evaluation Form
6. Original Proposed Permit for Public Review
7. Adams Construction Form 7

MEMO TO THE BOARD

INTRODUCTION

Adams Construction Company (referred to as "Adams Construction", "the company", or "the applicant") currently operates a portable asphalt plant in Rockbridge County, just east of the Lexington city limits and just north of highway US 60. The portable asphalt plant was initially permitted by DEQ's South Central Regional Office in 1993 with a home base in Campbell County, but it has been operating on a temporary basis at its current location near Lexington since 1999. Earlier this year, DEQ's Valley Regional Office (VRO, whose jurisdiction includes Rockbridge County) decided not to further extend its authorization for the company to continue to operate on a temporary basis at its current location. Instead, DEQ directed Adams Construction to submit an air permit application to formally change the plant's home base of operations to its current location.1

1 This presents the somewhat unusual situation of a new (i.e., greenfield) air permit being issued for an existing facility.

Adams Construction prepared a Form 7 Asphalt air permit application that DEQ received on March 10, 2008. In this permit application, the company requested to increase its permitted asphalt production limit from 125,000 to 400,000 tons per year (tpy). The proposed permit made available to the public for comment was based on the 400,000 tpy request; after the commencement of the public comment period the company lowered its request to 200,000 tpy.

The company's portable asphalt plant is classified under DEQ air regulations as a minor source of air pollution. Therefore, the permit application is subject to review under the state's minor New Source Review permit program, 9 VAC 5 Chapter 80, Article 6. There are no mandatory public participation requirements for the issuance of minor new source review permits. However, due to controversy arising from a local government rezoning request last year at the nearby Charles W. Barger Quarry, VRO invoked the provisions of 9 VAC 5-80-1170 D.3 to solicit public comment and to convene a public hearing regarding the proposed minor new source review permit.

A public notice regarding the proposed permit, which notified the local community about the public comment period and public hearing, was published by DEQ in *The News-Gazette* of Lexington on June 25, 2008. Ninety-two individuals and two organizations (Adams Construction and the Rockbridge Area Conservation Council) participated in the public comment period and/or the public hearing. Adams Construction and one individual (who is not affiliated with the company) supported issuance of the proposed air permit; all other participants either opposed issuance of the permit or attended the public hearing without stating a position.

DEQ's Public Participation Report provides further discussion of the public participation process, which included a public comment period extending from June 26, 2008 to July 31, 2008, and a public hearing held on July 31, 2008. Attachments to that Report include tables identifying all of the issues raised and a copy of all written comments and petitions received. DEQ has reviewed all comments, and has grouped the comments into seventeen issue categories. The concerns expressed, and DEQ's responses thereto, are provided in DEQ's Response to Comments document. DEQ has revised the proposed permit in response to public comments received from both the company and the public.

OVERVIEW OF VIRGINIA'S NSR PERMT PROGRAM

As previously stated, the Adams Construction permit application has been processed in accordance with Virginia's minor NSR permit program (9 VAC 5 Chapter 80, Article 6). This is a pre-construction review permit program which is included in Virginia's State Implementation Plan (SIP) to manage the growth of emissions resulting from the construction, relocation, modification, and reconstruction of stationary sources of air emissions that are not subject to the state's major NSR permit program, which is also referred to as the Prevention of Significant Deterioration (PSD) permit program.2 With some exceptions, the minor NSR permit program is used to permit new stationary sources with emissions less than 250 tpy of each individual criteria pollutant.3 Of the 821 NSR permit applications received by DEQ in the past year, only 4 applications were subject to the PSD permit program. The remaining 817 permit applications were reviewed under the minor NSR permit program with the vast majority of these sources seeking emission levels of less than 100 tpy. Unlike the PSD permit program, there is no comparable federal equivalent to the state's minor NSR permit program.

The goals of both the PSD and minor NSR programs are essentially the same: (1) to ensure that new or modified stationary sources of air emissions are designed and constructed to comply with a standard of performance considered to be the Best Available Control Technology (BACT), *unless specifically exempt from*

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2 There are actually two major NSR permit programs which regulate criteria pollutant emissions in Virginia: 9 VAC 5 Chapter 80, Article 8, "Permits for Major Stationary Sources and Major Modifications Locating in Prevention of Significant Deterioration Areas", also referred to as the PSD permit program; and 9 VAC 5 Chapter 80, Article 9, "Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas or the Ozone Transport Region".

3 There are 28 source categories that are subject to PSD review at an emissions level of 100 tpy.

BACT, and (2) to ensure that the operation of the new or modified stationary source does not prevent or interfere with the attainment of any applicable ambient air quality standard. While Virginia has structured its minor NSR permit program similarly to the PSD program, there are distinct differences in how the two programs are implemented by DEQ with respect to BACT and air quality demonstration requirements. Public participation requirements also differ between the two programs. These differences are discussed below and are summarized in Table 1.

BACT Analysis

All stationary sources subject to PSD permitting are required to conduct BACT analyses for each pollutant emitted at major source or significant levels. There are significant costs to the applicant in preparing the PSD BACT analysis. This is a rigorous evaluation conducted on a pollutant-by-pollutant basis that involves not only evaluation of the best controlled similar facilities in the U.S., but also a review of the feasibility of technology transfer from other types of sources not only in the U.S. but also worldwide. The purpose of the PSD permit program's top-down approach is to select the control option that results in the highest level of control while still allowing consideration of the cost effectiveness of that technology. For example, a control technology achieving a control efficiency of 99% with an annualized cost of $500,000 per year would prove to be more cost effective for a source with uncontrolled emissions of 5,000 tpy ($111.11 per ton removed) versus a source with the same annualized cost of control emitting 50 tpy of the same pollutant ($10,101 per ton removed).4 After permit issuance, this case-by-case control standard remains in effect until the source makes another physical or operational change that may require a new BACT analysis.

In contrast, not all stationary sources subject to minor NSR permitting are required to perform a site-specific BACT analysis. According to 9 VAC 5-50-260 B, only new stationary sources with potential to emit (PTE) in excess of the permit exemption levels in 9 VAC 5-80-1320 C are required to apply BACT. In determining the PTE of a source for BACT applicability, DEQ may take into account operational restrictions such as raw material throughputs or limits on operating hours which may be enforced by conditions placed in the minor NSR permit, but not the effect of proposed add-on controls. For example, a new stationary source with uncontrolled sulfur dioxide (SO_2) emissions of 50 tpy requesting a permit limit that restricts the number of operating hours with a corresponding PTE of 33 tpy would fall below the BACT threshold level for SO_2 of 40 tpy. A similar source proposing to operate a scrubber to reduce emissions below the BACT threshold of 40 tpy with no other operational restrictions would be subject to a BACT demonstration.

The BACT analysis for minor sources is also a less rigorous evaluation than the PSD BACT analysis. Because of the large number of applications which are subject to the minor NSR program statewide, DEQ has developed a number of permit boilerplates and procedures to streamline the permit application review process for various source categories that are typically subject to the minor NSR permit program.5 The purpose of these common boilerplate procedures is to establish presumptive BACT standards and to standardize monitoring, recordkeeping, and reporting requirements. Sources agreeing to meet the presumptive BACT standard are generally not required to submit a BACT analysis as part of the permit application process. This approach serves the two-fold purpose of reducing permit processing times while ensuring consistent statewide permit requirements for affected facilities within same source category. This level of consistency is especially important in order to establish a level playing field for regulatory compliance across the state.

Air Quality Demonstration

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4 Virginia has no established cost threshold in determining whether a control technology would be cost prohibitive to implement.

5 "Hot Mix Asphalt Producing Facilities" is one of the source categories for which DEQ has adopted permit boilerplate and permitting procedures.

All applicants subject to the PSD permitting program are required to conduct an air quality analysis of the ambient impacts associated with the construction and operation of the new stationary source or modification. The main purpose of the evaluation is to demonstrate that the new emissions from the project, in conjunction with other emissions from existing nearby sources, will not cause or contribute to a violation of any applicable National Air Quality Standard (NAAQS) or PSD increment.6 A separate air quality analysis is required for each regulated pollutant emitted in significant amounts and the analysis needs to be conducted using EPA-approved refined modeling methods.

The majority of all minor NSR permit applicants are not required to conduct an air quality analysis. Under current air permit program guidance only emissions increases (permit allowable emissions) that exceed the PSD significant emission rates require modeling to demonstrate compliance with the NAAQS. DEQ has used the EPA PSD significant emission rates as the basis for its *de minimis* modeling thresholds under the minor NSR program because: (1) it is unlikely that sources at or below this magnitude would cause or contribute to a violation of the NAAQS, and (2) the burden of conducting modeling in support of hundreds of permit applications annually for small emissions sources throughout the State is substantial and would result in trivial or no value to the permitting process. PSD increment is not evaluated under the minor NSR permit program.

Air quality modeling is required under both the minor NSR and PSD programs for any source subject to the state air toxics rules in 9 VAC 5 Chapter 60, Articles 4 and 5, if the potential to emit of the source exceeds either the hourly or annual air toxics exemption level. If modeling is conducted, the analysis may be conducted using an EPA-approved screening or refined modeling procedure.

Public Participation

All PSD permits are subject to public comment and hearing. In addition, new stationary sources seeking emissions equal to or greater than 100 tpy under the minor NSR permit program (but not subject to PSD permitting) are also subject to a mandatory public comment period and hearing. All other new stationary sources subject to the minor NSR permit program do not undergo public participation unless the proposed permit action is considered controversial.

Table 1: Virginia's New Source Review Program Requirements

Emission Level	PSD Permit > 250 tpy	Minor NSR Permits <250–100 tpy	<100–40 tpy	<40 tpy–15 tpy	<15 tpy
BACT Analysis [a]	**Yes**	**Yes**	**Yes (all but VOC and CO)**	**Yes (only PM_{10})**	**No**
Air Quality Demonstration [b]	**Yes (all except VOC)**	**Yes (all except VOC)**	**Yes (all but VOC and CO)**	**Yes (only PM_{10})**	**No**

a. The BACT emission level is the PTE of the source considering restrictions on throughput or operating hours, without consideration of air pollution controls.
b. The air quality demonstration level is the permitted allowable emission rate of source.

ADAMS CONSTRUCTION PERMIT APPLICATION SUMMARY

This existing facility is a portable hot mix asphalt plant with a parallel flow drum configuration. Its fuel-burning equipment consists of:

6 The PSD increment is the maximum allowable increase in concentration that is allowed to occur above the ambient baseline concentration existing at the time of the first PSD permit application affecting the area. The maximum allowable increase in concentration that is allowed to occur varies by pollutant and area classification.

- One aggregate dryer,
- One liquid asphalt storage tank heater, and
- One diesel-powered electric generator.

These emission units have criteria pollutant emissions resulting from fuel burning – primarily nitrogen oxides (NOx), sulfur dioxide (SO_2), and particulate matter (PM). The aggregate dryer also has particulate matter (both total PM and PM_{10}) emissions resulting from the drying of the aggregate. In addition, fugitive emissions of particulate matter are generated by various materials handling and storage activities that occur onsite.

The proposed increase in the facility's annual asphalt production limit from 125,000 tons to 200,000 tons would be achieved with the existing equipment – no new equipment would be added to the facility, and no existing equipment would be physically modified. To achieve the production increase, the facility would operate more hours per year. The total emissions for the facility operating at the proposed level of 200,000 tpy are shown in Table 2 below.

Table 2: Proposed Facility-Wide Emissions (tpy)

Pollutant	Total Annual Emissions
PM	5.0
PM_{10}	2.9
SO_2	6.4
NO_x	18.9
CO	18.7
VOC	4.5

OVERVIEW OF THE PROPOSED PERMIT

This section summarizes process controls, emission limitations, monitoring, testing, recordkeeping and reporting requirements in the proposed permit. Please refer to the Engineering Evaluation for the proposed permit for more detailed discussion on permit development.

Best Available Control Technology Review (BACT)

Pursuant to 9 VAC 5-50-260, a BACT review is required. Since this project is being evaluated as a new source, the new source emission thresholds of 9 VAC 5-80-1320 C. apply, per 9 VAC 5-50-260 B. Table 1 summarizes the net emissions increase (NEI) for the entire facility and for each separate emissions unit. All emissions listed in Table 1 were calculated utilizing current AP-42 emission factors and DEQ procedures.7 For BACT applicability purposes, NEI is calculated using the proposed throughput limits, but not including any proposed control technologies. The proposed asphalt throughput limit is 200,000 tons per year, which at the maximum rated capacity of 300 tons per hour would result in 667 hours of operation of the asphalt plant, or at a lower production rate of 100 tons per hour would result in 2,000 hours of operation of the asphalt plant. The NEI for the diesel engine is conservatively based on 2925 hours of operation per year, which allows for power production during each start-up and shut-down of the plant. Emissions calculations for the aggregate dryer were made using distillate oil (Nos. 2 and 4 fuel oil) and waste/recycled oil, and the worst-case emissions are reflected in the tables below. The only difference in emissions of criteria pollutants between the distillate oil

7 AP-42: Chapter 11.1, Hot Mix Asphalt Plants for the aggregate dryer, load-out and silo filling; Chapter 1.3, Fuel Oil Combustion for the asphalt heater; and Chapter 3.4, Large Stationary Diesel Engines, for the generator. DEQ Procedures: Hot Mix Asphalt Producing Facilities Guidance Document & Emission Factors; and Stone Processing Procedures, for emissions from stockpiles, load-out, and silo filling.

and the waste/recycled oil is in sulfur oxide (SO_x) emissions, with the waste/recycled oil producing higher SO_x emissions.

As shown in Table 3 below, the NEI for PM and PM_{10} from the facility exceeds the BACT exemption rate; therefore, BACT is applicable for these pollutants at all emissions units at the facility, per 9 VAC 5-50-260 B. BACT for PM and PM_{10} emissions from the aggregate dryer is the use of a fabric filter/baghouse, which is required under the draft permit (and which is already in use at the facility). Based on DEQ's review, a fabric filter or baghouse is considered the most efficient control device available for controlling PM and PM_{10} emissions from the aggregate dryer.

BACT for PM and PM_{10} emissions from the miscellaneous materials handling and storage sources is the use of wet suppression or DEQ-approved equivalent, which is required under the permit. In light of the very low emissions of PM and PM_{10} from the asphalt heater and diesel-powered electric generator, BACT for emissions of PM and PM_{10} from these emissions units is simply proper operation and maintenance of these units.

The NEI for all other pollutants from all other emissions units are below their respective BACT exemption rates; therefore, BACT does not apply to the other emission units. However, the facility's generator includes an ignition timing retard device that reduces the formation of NOx, and the company voluntarily accepted a reduction in the maximum fuel sulfur content for all distillate oil used at the facility from 0.5% to 0.05%. Distillate oil is the only fuel authorized for the diesel-powered electric generator and asphalt storage tank heater, and the emission limits specified in the draft permit for these two emission units reflect this reduced fuel sulfur content. Historically distillate oil has been the primary fuel used by the company in the aggregate dryer, and the draft permit includes the same 0.05% fuel sulfur limit for all distillate oil used in the aggregate dryer. However, the draft permit also authorizes the use of waste/recycle fuel oil with a maximum sulfur content of 0.5% in the aggregate dryer, so the sulfur dioxide emission limits for the aggregate dryer specified in the draft permit reflect this higher fuel sulfur content.

Table 3: BACT Applicability – Uncontrolled Emissions

Facility-Wide Uncontrolled Emissions			
Pollutant	**NEI (tpy)**	**BACT Applicability Thresholds (tpy)**	**BACT Applicable**
PM	2818	25	Yes
PM_{10}	658	15	Yes
SO_x	**6.4**	**40**	**No**
NO_x	**18.9**	**40**	**No**
CO	**18.7**	**100**	**No**
VOC	**4.5**	**25**	**No**

Operational and Emission Limits

The proposed permit contains the following emission controls, operating requirements, and emission limitations:

- PM/PM_{10} emissions from the aggregate dryer to be controlled by fabric filter/baghouse.
- NOx emissions from the diesel electric generator to be controlled through ignition timing retard.
- Fugitive dust from material handling and stockpiles shall be controlled by wet suppression.
- Operating hours for the diesel electric generator limited to 2925 hours per year.
- Asphalt production limit of 200,000 tpy.
- Fuel throughput and fuel sulfur limitations (0.05% for distillate oil and 0.5% for waste/recycled oil).

Table 4: Proposed Permit Emission Limits (tpy)

Pollutant	Aggregate Dryer	Asphalt Heater	Diesel-Powered Electric Generator	Miscellaneous (loadout, stockpiles)	Total
PM	**3.36**	**0.06**	**0.69**	**0.85**	**5.0**
PM_{10}	**2.27**	**0.03**	**0.14**	**0.41**	**2.9**
SO_x	**5.80**	**0.20**	**0.40**	**n/a**	**6.4**
NO_x	**5.50**	**0.55**	**12.85**	**n/a**	**18.9**
CO	**13.00**	**0.14**	**5.44**	**0.11**	**18.7**
VOC	**3.20**	**0.01**	**0.63**	**0.68**	**4.5**

Details of the basis for the proposed emission limits are set forth in the supporting documentation.

Testing

The proposed permit requires an initial stack test for PM and PM_{10} for the baghouse exhaust stack. This will confirm that the fabric filter/baghouse is in fact operating at the high efficiency assumed in the applicable emission factors. The proposed permit also requires that a visible emissions evaluation test be conducted on the fabric filter exhaust stack at the time of the initial stack test. The permit includes a condition allowing DEQ to require additional testing as necessary.

Monitoring

The proposed permit requires the fabric filter to be equipped with a device to continuously measure and record the differential pressure drop across the fabric filter. This device is already in use at the facility. These measurements are used to monitor the performance of the fabric filter.

Recordkeeping

The proposed permit contains the following recordkeeping requirements:

- Annual production of asphalt, in tons;
- Annual throughput of fuel through the aggregate dryer and liquid asphalt storage tank heater (each reported separately), in gallons;
- Hours of operation of the diesel-powered electric generator;
- Fuel supplier certifications, including fuel sulfur content, for all fuel shipments;
- Operation and control device monitoring records for the fabric filter;
- Scheduled and unscheduled maintenance, and operator training;
- Results of all stack tests and visible emission evaluations; and
- Log of all odor complaints received and their resolution.

Portability Conditions

Conditions 36 through 38 set forth the Department's standard boilerplate conditions for portable facilities. Condition 36 authorizes the company to apply to the Department for permission to move this portable plant to another location. The Department evaluates any such requests on a case-by-case basis. Condition 37 sets forth the information that the company must provide to the Department for any relocation request. Condition 38 limits the operation of the portable plant at any single temporary site (i.e., any location other than the home base specified in the permit) to 18 months, although this period can be extended in writing by the Department.

PUBLIC PARTICIPATION ACTIVITIES

A public notice regarding the proposed permit, which notified the local community about the public comment period and public hearing, was published by DEQ in *The News-Gazette* of Lexington on June 25, 2008. Ninety-two individuals and two organizations (Adams Construction and the Rockbridge Area Conservation Council) participated in the public comment period and/or the public hearing. Adams Construction and one individual (who is not affiliated with the company) supported issuance of the proposed air permit; all other participants either opposed issuance of the permit or did not state a position.

Public Comment Period

The public comment period opened on June 26, 2008, which is the day after publication of the public notice, and it closed on July 31, 2008, which is the day the public hearing was held. Twenty-five written comments were received. In addition, sixty-three typewritten petitions were received, each signed by a different individual.

Public Hearing

The public hearing was held at the Rockbridge County Administration Building in Lexington at 6:30 p.m. on July 31, 2008. The public hearing was preceded at 6:00 p.m. by a public briefing by DEQ and a question and answer session. VRO representatives in attendance were: Amy Owens, Regional Director; Larry Simmons, Deputy Regional Director; Sharon Foley, Air Permit Manager; and Kevin Covington, air permit writer. Approximately seventy people attended the hearing, with eighteen offering testimony. Except for the representative from Adams Construction, all commenters opposed issuance of the proposed air permit.

DEQ's Public Participation Report provides further summarizes the public participation process, and includes copies of all written comments and petitions received. The full text of the Department's Response to Comments document begins on page 27 of this document.

RESPONSE TO COMMENTS

This section identifies the primary issues raised during the public participation process and provides the Department's responses to those concerns. The Department's complete Response to Comments document begins on page 27.

The Facility is a Minor Source of Air Pollution

1. Commenters asserted that the plant is a significant source of air pollution, and DEQ has not adequately evaluated the plant's potential to cause significant deterioration in air quality.

Under EPA and DEQ regulations, this asphalt plant is a "minor"8 source of air pollution, as opposed to a "major" source, and as such it is not subject to Prevention of Significant Deterioration ("PSD") review or to any other regulatory review requirements that apply only to major sources. As shown in Table 5, the criteria pollutant emissions from the plant – even when operating at the maximum asphalt production level of 200,000 tpy authorized under the proposed permit – would be less than 10% of the applicable major source thresholds.

Table 5: Proposed Permit Limits Compared to Various Regulatory Thresholds (tpy)

Pollutant	**Major Source Thresholds – Unlisted Source Categories[a]**	**Major Source Thresholds – Listed Source Categories[b]**	**DEQ Modeling Exemption Levels[c]**	Proposed Permit Limits for Adams Construction[d]	Permit Limits as Percentage of Major Source Thresholds[e]
PM	250	100	25	5.0	2.0%
PM_{10}	250	100	15	2.9	1.1%
SO_2	250	100	40	6.4	2.6%
NO_x	250	100	40	18.9	7.6%
CO	250	100	100	18.7	7.5%
VOC	250	100	40	4.5	1.8%

a. Under 9 VAC 5-80-1615 "Major stationary source" (a)(2), any stationary source not included within the 28 source categories listed within (a)(1) is considered a "major stationary source" if it emits, or has the potential to emit, 250 tpy or more of any regulated NSR pollutant, which are primarily the "criteria pollutants" for which National Ambient Air Quality Standards (NAAQS) have been developed. Virginia's list of 28 source categories is the same as provided in Section 169 of the federal Clean Air Act. Hot mix asphalt plants are not among the 28 listed source categories; accordingly, Adams Construction's asphalt plant would need to be permitted to emit 250 tons of any single criteria pollutant in order to be classified as a "major" source.

b. Per 9 VAC 5-80-1615 "Major stationary source" (a)(1), any stationary source included within the 28 source categories listed therein is considered a "major stationary source" if it emits, or has the potential to emit, 100 tpy or more of any regulated NSR pollutant. As noted above, Virginia's list of 28 source categories is the same as provided in Section 169 of the federal Clean Air Act. The listed source categories include fossil fuel-fired power plants, iron and steel mills, petroleum refineries, and chemical process plants.

c. DEQ has a long-established policy under which proposed emissions that are below the *de minimis* modeling thresholds set forth in the *DEQ New Source Review Permits Program Manual (rev. April 1, 2002)*, pp.65-67, are not required to undergo a NAAQS compliance demonstration. These modeling thresholds mirror the PSD significance levels set forth at 9 VAC 5-80-1615.

d. The values provided in this column are based the sum of the permit limits for all emission units at the plant for each pollutant, which are based on the plant operating at its maximum permitted capacity of 200,000 tpy of asphalt. To the extent that the plant operates below its maximum permitted capacity, its actual emissions will be less than the values specified.

e. This column was calculated by dividing the proposed permit limits by the applicable major source threshold of 250 tpy.

<u>Air Quality Modeling and Monitoring</u>

8 A facility is considered a "true minor" source if its uncontrolled emissions would be below major source thresholds. A facility is considered a "synthetic minor" source if its uncontrolled emissions would be above major source thresholds, but its controlled emissions are below major source thresholds. Since Adams Construction's uncontrolled emissions of PM and PM_{10} exceed the major source thresholds, this facility is a synthetic minor source.

2. Commenters requested that air quality modeling and local air quality monitoring be conducted prior to issuance of this permit.

The Department did not initially require modeling for this permit action because as described in Table 5 above, the total proposed emissions from this facility are well below the agency's modeling thresholds. In response to public comment, however, the Department has required Adams Construction to conduct air quality modeling. This modeling evaluates all relevant criteria pollutants and seven air toxics that are of greatest concern from asphalt plants: formaldehyde, benzene, acrolein, hydrogen chloride, mercury, phosphorus, and quinone.

All modeling results demonstrate compliance with the applicable National Ambient Air Quality Standards (NAAQS) for criteria pollutants and Significant Ambient Air Concentrations (SAAC) for air toxics. The air quality modeling analysis conforms to 40 CFR Part 51, Appendix W (*Guideline on Air Quality Models*) and was performed in accordance with DEQ-approved modeling methodology. Nearby sources were explicitly modeled for SO_2, PM_{10} and NO_2 because these sources of air emissions might cause a "significant concentration gradient" in the vicinity of Adams Construction as defined in Section 8.2.3 of the *Guideline on Air Quality Models*. The facilities evaluated include Charles W. Barger & Son Construction (quarry); Shenandoah Hardwood Lumber Company; Virginia Military Institute; Washington & Lee University; Rockingham Asphalt, Inc.; Bontex, Inc.; Painter Space Print; and Fitzgerald Lumber & Log Company, Inc. DEQ's memorandum summarizing the applicant's air quality modeling efforts is titled "Technical Review of the Air Quality Analysis in Support of the Permit Application for Adams Construction (Registration #81607)" and begins on page 51 of this document.

3. Commenters questioned whether air quality monitoring data collected in either Roanoke or Harrisonburg, which was used in the modeling analysis, is representative of conditions in Lexington.

DEQ meteorologists selected ambient air quality monitoring data for use in the modeling analysis based on several EPA criteria, including the following:

1. Population density and degree of urbanization (including commercial and industrial development)

2. Traffic and commuting patterns

3. Growth rates and patterns

4. Meteorology (weather/transport patterns)

5. Geography/topography (mountain ranges or other air basin boundaries)

The use of the data from Roanoke and Harrisonburg adequately represents, or even conservatively overstates, levels of existing background air quality in the area surrounding the plant. Both the Rockingham County and Roanoke County monitors are located in areas that are prone to relatively higher air quality concentrations than the Rockbridge/Lexington area. For example, the current 8-hour ozone design value for the Roanoke Metropolitan Statistical Area (MSA) for the period 2005 through 2007 is 76 parts per billion (ppb) whereas the design value in Rockbridge County for the same period is much lower at 69 ppb. Ozone concentrations also tend to be higher in Rockingham County when compared to Rockbridge County. Similarly, particulate matter concentrations are also greater in Roanoke than in many other locations in the Shenandoah Valley. This is due in part to the Roanoke monitor being located in a geographic area surrounded by mountains which results in higher monitored concentrations.

DEQ recognizes the desire of the public to collect monitoring data. However, it is not feasible from an economic and in many cases a technical standpoint to require ambient monitoring for every facility, particularly for minor sources such as an asphalt plant. Many factors enter into the decision-making process on whether to monitor at a particular location, including the likelihood of violating an applicable NAAQS. In this circumstance, and based on the aforementioned criteria it is unlikely that any NAAQS violations exist and that source-specific ambient air monitoring would impose a substantial and unnecessary burden on the applicant and would unnecessarily delay a final decision on the permit.

As a result of public comments received on this proposed permit, DEQ has located a PM_{10} monitor to Central Elementary School, which is approximately 0.4 miles northwest of the asphalt plant. As of the date of this document, only one sample from this monitor has been collected and analyzed, with a result of 7 ug/m^3, as compared to the PM_{10} standard of 150 ug/m^3.

Impacts on Human Health and the Environment

4. Commenters raised concerns about the potential impacts to human health from the facility.

The City of Lexington and Rockbridge County are considered attainment areas for all NAAQS. As previously discussed, air quality modeling has been conducted and the results of this analysis indicate that emissions from this facility do not interfere with the attainment of any NAAQS and are also in compliance with the relevant SAACs.

The Clean Air Act (CAA) requires EPA to establish standards for air concentrations of criteria pollutants that are protective of public health, including the health of sensitive groups including children and elderly. Accordingly, EPA promulgated the NAAQS, which specify maximum concentrations for various averaging times below which the air quality is considered acceptable with an adequate margin of safety. Each NAAQS includes both primary and secondary standards. The primary standards are intended to protect human health, including the health of vulnerable citizens – elderly, children, and citizens with chronic illnesses; whereas, the secondary standards are intended to protect public welfare (e.g., damage to vegetation) from any known or anticipated adverse effects associated with the presence of air pollutants. The NAAQS for any single pollutant may include either short-term (24 hours or less) standards to address potential acute effects, long-term (generally annual) standards to address potential chronic effects, or both, as appropriate.

Extensive review is undertaken in the development of each NAAQS, and the CAA requires that each NAAQS be reviewed every five years, which ensures that the NAAQS reflect the most current health effects data that is available and remain sufficiently protective of public health. For example, the $PM_{2.5}$ and 8-hour ozone standards were recently adopted in response to new data that showed that a large number of vulnerable individuals would benefit from lower, more stringent standards.

The SAACs for air toxics are established by the Board, and they are based on health-based Threshold Limit Values (TLVs) developed by the American Conference of Governmental Industrial Hygienists (ACGIH). Similar to the NAAQS, the SAAC for any single pollutant may include short-term (hourly) limits to address potential acute effects; long-term (annual) limits address potential chronic effects; or both, as appropriate.

Site Suitability

5. Commenters stated that the facility is poorly sited because of its presence near the population center for the City of Lexington, including proximity to an elementary school and a hospital (within ½ mile and ¾ mile of the plant, respectively).

In determining the site suitability of a project during the permit review process as required by § 10.1-1307 E of the Code of Virginia, DEQ follows the State Air Pollution Control Board's September 11, 1987

policy which states that the suitability of a facility to a specific location must be determined by the local governing body, except as to the following questions involving the air quality:

1. Air Quality characteristics and performance requirements defined by Board regulations;

2. The health impact of air quality deterioration which might reasonably be expected to occur during the grace period allowed by Board regulations or the permit conditions to fix malfunctioning air pollution control equipment; and

3. Anticipated impact of odor on surrounding communities or violation of the Board's Odor Rule.

This division of authority between local governments and DEQ is designed to be consistent with the intent of §15.1-427, Code of Virginia, which encourages local governments to make use of planning and zoning as a way to manage community development and growth in order to protect public health, welfare, and safety.

The proposed permit for Adams Construction is consistent with the Board's regulations and policies concerning the three air quality issues listed above for its present location near Lexington. Additionally, by executing the Local Governing Body Certification Form on April 10, 2008, Rockbridge County has confirmed that the facility is consistent with local ordinances.

Adequacy of the Air Pollution Controls

6. Commenters asserted that more effective pollution controls should be employed by the facility.

The proposed permit requires the use of the existing fabric filter/baghouse, which reduces total PM and PM_{10} emissions from the aggregate dryer by greater than 99.5%. As mentioned previously, a fabric filter/baghouse is considered the most efficient system available to control particulate matter emissions from asphalt plants. The proposed permit requires that an initial stack test be conducted to confirm that this level of control is in fact achieved by the baghouse. The proposed permit also requires the use of wet suppression or the equivalent for all materials handling activities, which reduces total PM and PM_{10} emissions from materials handling activities by approximately 95%. These emissions control requirements meet the federal requirements for asphalt plants set forth in 40 CFR Part 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities); they also meet the presumptive BACT requirements set forth in DEQ's permit boilerplate for asphalt plants (Virginia DEQ Procedures for Hot Mix Asphalt Facilities – Guidance Document & Emission Factors Version 1.0); and they are consistent with the controls required on asphalt plants of similar size throughout the state.

In addition, the facility's emissions of sulfur dioxide are limited through the fuel sulfur content limits specified in the proposed permit.

CHANGES TO THE PROPOSED PERMIT

Following are the material changes resulting from public comment from the original proposed permit which have been made in the proposed permit for consideration by the Board:

1. Reduction in the asphalt production limit from 400,000 tpy to 200,000 tpy (Condition 9);

2. An associated reduction in the emission limits for the aggregate dryer (Condition 16) and materials handling operations (Condition 19), both of which are dependent solely on the level of asphalt production;

3. Reduction in the sulfur content limit for distillate oil from 0.5% to 0.05% (Condition 12), which reduced the sulfur dioxide emission limits for the diesel electric generator (Condition 18) and the asphalt storage

tank heater (Condition 17) [the emission limit for the aggregate dryer did not change because recycled fuel oil with 0.5% sulfur is still authorized by the proposed permit for this emissions unit];

4. Addition of permit conditions regarding odor controls and odor complaints (Conditions 39 through 42); and

5. Change the limit on the operation of the diesel electric generator from gallons of fuel used to hours of use of the generator (Condition 8), which was done to facilitate compliance since the generator has an integrated hours meter. The operating hours limit specified in the permit (2925 hours) is based on the gallons of fuel limit specified in the previous draft of the permit; therefore, this change will not result in any change in emissions from the generator.

SUPPORTING DOCUMENTATION

1. Revised Proposed Permit (September 2008)

2. Response to Comments (including the Technical Review of the Air Quality Analysis in Support of the Permit Application for Adams Construction (Registration #81607))

3. Public Participation Report (including a copy of all written comments and petitions received)

4. Engineering Evaluation for the Proposed Permit

5. Original Proposed Permit for Public Review (June 2008)

6. Adams Constructions Form 7 Asphalt Permit Application

RECOMMENDATION

The staff recommends that the Board authorize the issuance of minor NSR permit to Adams Construction as drafted.

Adams Construction Company
Lexington Asphalt Plant
Registration No. 81607

DEQ's Response to Comments

November 14, 2008

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List of Acronyms

BACT – Best Available Control Technology

CAA – Clean Air Act

CO – Carbon monoxide

DEQ – Virginia Department of Environmental Quality

EPA – U.S. Environmental Protection Agency

NAAQS – National Ambient Air Quality Standard

NO_X – Nitrogen Oxides

NPS – National Park Service

NSR – New Source Review

PM – Particulate Matter

PM_{10} – Particulate Matter having aerodynamic diameter of ten microns or less

ppm – parts per million

PSD – Prevention of Significant Deterioration

RACC – Rockbridge Area Conservation Council

SAAC – Significant Ambient Air Concentration

SIP – State Implementation Plan

SO_2 – Sulfur dioxide

tpy – tons per year

VAC – Virginia Administrative Code

VOC – Volatile Organic Compound

VRO – DEQ, Valley Regional Office

Introduction

Adams Construction Company (referred to as "Adams Construction", "the company", or "the applicant") operates a portable asphalt plant in Rockbridge County, just east of the Lexington city limits and just north of highway US 60. The portable asphalt plant was initially permitted by DEQ's South Central Regional Office in 1993 with a home base in Campbell County, but it has been operating on a temporary basis at its current location near Lexington since 1999. Earlier this year, DEQ's Valley Regional Office (VRO, whose jurisdiction includes Rockbridge County) decided not to further extend its authorization to allow the company to continue to operate on a temporary basis at its current location and directed Adams Construction to submit an air permit application to formally change the plant's home base of operations to its current location. As part of this requested permit application, Adams Construction also initially requested to increase its permitted asphalt production limit from 125,000 to 400,000 tons per year; however, the company subsequently lowered its request to 200,000 tons per year.

The company's portable asphalt plant is classified under DEQ air regulations as a minor source of air pollution, and there are no mandatory public participation requirements for the issuance of minor new source review permits. However, due to controversy arising from a local government rezoning request last year at the adjacent Charles W. Barger Quarry, VRO invoked the provisions of 9 VAC 5-80-1170 D.3 to solicit public comment and to convene a public hearing regarding the proposed minor new source review permit.

A public notice regarding the proposed permit, which notified the local community about the public comment period and public hearing, was published by DEQ in *The News-Gazette* of Lexington on June 25, 2008. Ninety-two individuals and two organizations (Adams Construction and the Rockbridge Area Conservation Council) participated in the public comment period and/or the public hearing. Adams Construction and one individual (who is not affiliated with the company) supported issuance of the proposed air permit; all other participants either opposed issuance of the permit or attended the public hearing without stating a position.

DEQ's Public Participation Report (dated September 10, 2008) provides a summary of the public participation process, which included a public comment period extending from June 26, 2008 to July 31, 2008, and a public hearing held on July 31, 2008. Attachments to that Report include a copy of all written comments and petitions received. Regarding the petitions, fifty-eight copies of an identical typed petition were received, each signed by a different individual, which are collectively referred to as Petition 1 in the Report and in this Response to Comments document. Four copies of a different typed petition, which includes handwritten issues, are collectively referred to as Petition 2. One additional typed petition, which did not follow the format of the other petitions, is referred to as Petition 3. DEQ has reviewed all comments, and has grouped the comments into seventeen issue categories. The concerns expressed are described below, with the Department's response immediately following each item.

Issue 1: The plant is a significant source of pollution

Comment: The plant is a significant source of air pollution, and DEQ has not adequately evaluated the plant's potential to cause significant deterioration in air quality.

DEQ Response: Under EPA and DEQ regulations, Adams Construction's asphalt plant is a "minor" source9, as opposed to a "major" source, and as such it is not subject to Prevention of Significant Deterioration ("PSD") review or to any other regulatory review requirements that apply only to major sources. As shown in Table 1 below, all of the criteria pollutant emissions from the plant – even when operating at the maximum asphalt production level of 200,000 tpy authorized under the proposed permit – would be less than 10% of the applicable major source thresholds.

Table 1: Proposed Permit Limits Compared to Various Regulatory Thresholds (tpy)

[a] Under 9 VAC 5-80-1615 "Major stationary source" (a)(2), any stationary source not included within the 28 source categories listed within (a)(1) is considered a "major stationary source" if it emits, or has the potential to emit, 250 tpy or more of any regulated NSR pollutant. Virginia's list of 28 source categories is the same as provided in Section 169 of the federal Clean Air Act. Hot mix asphalt plants are not among the 28 listed source categories; accordingly, Adams Construction's asphalt plant would need to be permitted to emit 250 tons of any single criteria pollutant in order to be classified as a "major" NSR source.

Pollutant	**Major Source Thresholds – Unlisted Source Categories[a]**	**Major Source Thresholds – Listed Source Categories[b]**	**DEQ Modeling Exemption Levels[c]**	*Proposed Permit Limits for Adams Construction[d]*	*Permit Limits as Percentage of Major Source Thresholds[e]*
PM	250	100	25	5.0	2.0%
PM_{10}	250	100	15	2.9	1.1%
SO_2	250	100	40	6.4	2.6%
NO_X	250	100	40	18.9	7.6%
CO	250	100	100	18.7	7.5%
VOC	250	100	40	4.5	1.8%

[b] Per 9 VAC 5-80-1615 "Major stationary source" (a)(1), any stationary source included within the 28 source categories listed therein is considered a "major stationary source" if it emits, or has the potential to emit, 100 tpy or more of any regulated NSR pollutant. As noted above, Virginia's list of 28 source categories is the same as provided in Section 169 of the federal Clean Air Act. The listed source categories include fossil fuel-fired power plants, iron and steel mills, petroleum refineries, and chemical process plants.

[c] DEQ has a long-established policy under which proposed emissions that are below the *de minimis* modeling thresholds set forth in the *DEQ New Source Review Permits Program Manual (rev. April 1, 2002)*, pp.65-67, are not required to undergo a NAAQS compliance demonstration. These modeling thresholds mirror the PSD significance levels set forth at 9 VAC 5-80-1615.

[d] The values provided in this column are based the sum of the permit limits for all emission units at the plant for each pollutant, which are based on the plant operating at its maximum permitted capacity of 200,000 tpy of asphalt. To the extent that the plant operates below its maximum permitted capacity, its actual emissions will be less than the values specified.

[e] This column was calculated by dividing the proposed permit limits by the applicable major source threshold of 250 tpy.

9 A facility is considered a "true minor" source if its uncontrolled emissions would be below major source thresholds. A facility is considered a "synthetic minor" source if its uncontrolled emissions would be above major source thresholds, but its controlled emissions are below major source thresholds. Adams Construction's facility is a synthetic minor source because its uncontrolled PM and PM_{10} emissions would exceed the major source thresholds.

Issue 2: Need to conduct air quality modeling for the plant's increased emissions

Comment: Air quality modeling should be conducted to determine the impacts of the plant's increased emissions on local air quality. Also, the air quality modeling should account for impacts from other nearby sources, such as the Charles W. Barger Quarry.

DEQ's Response: In response to public comments, air quality modeling has been completed by the applicant for this facility despite the fact that longstanding DEQ permitting policies do not require modeling of criteria or toxic pollutant emissions in this case. Specifically, the permitted allowable criteria pollutant emissions from the asphalt plant are below the de minimis thresholds which trigger modeling under the minor NSR program, per the DEQ New Source Review Permits Program Manual (rev. April 1, 2002), pp.65-67. Additionally, toxic pollutant emissions from this facility are not subject to 9 VAC 5 Chapter 60, Article 5 (Emission Standards for Toxic Pollutants from New and Modified Sources (Rule 6-5)), due to the fact that the stationary source is in a source category for which EPA has made a formal determination that no regulations or other requirements need to be established pursuant to §112 of the federal Clean Air Act and has published the determination in the source category schedule for standards (see 9 VAC 5-60-300.C.5).

All modeling results demonstrate compliance with the applicable National Ambient Air Quality Standards (NAAQS) and Significant Ambient Air Concentrations (SAAC). The air quality modeling analysis conforms to 40 CFR Part 51, Appendix W (*Guideline on Air Quality Models*) and was performed in accordance with DEQ-approved modeling methodology. Nearby sources were explicitly modeled for SO_2, PM_{10} and NO_2 because these sources of air emissions might cause a "significant concentration gradient" in the vicinity of Adams Construction as defined in Section 8.2.3 of the *Guideline on Air Quality Models*. The facilities evaluated include Charles W. Barger & Son Construction (quarry), Shenandoah Hardwood Lumber Company, Virginia Military Institute, Washington & Lee University, Rockingham Asphalt, Inc., Bontex, Inc., Painter Space Print, and Fitzgerald Lumber & Log Company, Inc. DEQ's memorandum summarizing the applicant's air quality modeling efforts is titled "Technical Review of the Air Quality Analysis in Support of the Permit Application for Adams Construction (Registration #81607)" and beings on page 51 of this document.

Issue 3: Lack of local air quality monitoring data

Issue 3a: Monitoring data from Roanoke is not representative of Lexington

Comment: *There is no ambient air quality data for the Lexington area (except for ozone). The ambient data collected in Roanoke that DEQ is using in its modeling is not representative of air quality conditions around the asphalt plant. One year's worth of local data should be collected. Data should be collected during inversion conditions.*

DEQ Response: DEQ meteorologists selected the following ambient air quality monitoring data for use in the modeling analysis:

Table 2: Ambient Air Quality Data Used in the Modeling Analysis

POLLUTANT	AVERAGING PERIOD	CONCENTRATION ($\mu G/M^3$)	LOCATION/YEAR
PM_{10}	24-HR	32	ROANOKE

			CHERRY HILL, 2007
CO	**1-HR**	**4600**	**ROANOKE ROUND HILL, 2007**
	8-HR	**3680**	**ROANOKE ROUND HILL, 2007**
NO_2	**ANNUAL**	**26.5**	**ROCKINGHAM COUNTY, 2005**
SO_2	**3-HR**	**55.0**	**ROANOKE VINTON, 2006**
	24-HR	**26.2**	**ROANOKE VINTON, 2007**
	ANNUAL	**7.86**	**ROANOKE VINTON, 2005**

Selection of these monitoring stations was based on several EPA criteria, including the following:

6. Population density and degree of urbanization (including commercial and industrial development)
7. Traffic and commuting patterns
8. Growth rates and patterns
9. Meteorology (weather/transport patterns)
10. Geography/topography (mountain ranges or other air basin boundaries)

The selection and use of these data adequately represent, or conservatively overstate, levels of existing background air quality in the area surrounding the plant. Both the Rockingham County and Roanoke County monitors are located in areas that are prone to relatively higher air quality concentrations than the Rockbridge/Lexington area. For example, the current 8-hour ozone design value for the Roanoke Metropolitan Statistical Area (MSA) for the period 2005 through 2007 is 76 parts per billion (ppb) whereas the design value in Rockbridge County for the same period is much lower at 69 ppb. Ozone concentrations also tend to be higher in Rockingham County when compared to Rockbridge County. Similarly, particulate matter concentrations are also greater in Roanoke than other locations in the Shenandoah Valley. This is due in part to the Roanoke monitor being located in a geographic area surrounded by mountains which can enhance monitored concentrations.

In 1999, DEQ previously conducted a limited PM_{10} monitoring program in Lexington at the request of a local citizen, who expressed concern over emissions from both Adams Construction and Barger Quarry. The monitor was located at a shopping center that is approximately 0.37 miles northwest of the asphalt plant. Data (24-hour average), collected over a period of 3-months, ranged from a minimum concentration of 9 $\mu g/m^3$ to a maximum concentration of 43 $\mu g/m^3$ as compared to the PM_{10} NAAQS standard of 150 $\mu g/m^3$. As a result of public comments received on this proposed permit, DEQ has relocated a PM_{10} monitor to Central Elementary School, which is approximately 0.4 miles northwest of the asphalt plant. As of the date of this document, only one sample from this monitor has been collected and analyzed, with a result of 7 ug/m^3, as compared to the PM_{10} standard of 150 ug/m^3.

DEQ recognizes the desire of the public to collect monitoring data. However, it is not feasible from an economic and in many cases a technical standpoint to require ambient monitoring for every facility, particularly for minor sources such as an asphalt plant. Many factors enter into the decision-making process on whether to monitor at a particular location, including the likelihood of violating an applicable NAAQS. In this circumstance, based on the aforementioned criteria, it is unlikely a NAAQS violation exists and source-specific ambient air monitoring would impose a substantial and unnecessary burden on the applicant.

Lastly, DEQ has a well-established ambient air quality monitoring network. This network is subject to federal requirements contained in 40 CFR Part 58 (Ambient Air Quality Surveillance) and is subject to an annual monitoring plan and periodic network assessment to determine adequacy. EPA has determined that DEQ's existing network satisfies the requirements of 40 CFR Part 58. It is important to note that the public is provided an opportunity to comment on DEQ's monitoring plan on an annual basis.

Issue 3b: Use local monitoring data instead of modeling predictions

Comment: The asphalt plant is currently operating, and actual air quality data should be collected at the plant location and at sensitive receptor sites (such as the elementary school, hospital, future YMCA, local homes) while the plant is operating. This actual data would be more relevant than predictions made by a model. At a minimum, local air quality data is needed "to calibrate and verify modeling analyses".

DEQ Response: DEQ does not agree with the commenters that air quality monitoring is necessary in lieu of modeling. Models are important to DEQ's air quality management program because they provide a technically and economically feasible way of quantifying air quality impacts. Air quality models use mathematical and numerical techniques to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere. Based on inputs of meteorological data and source information like emission rates and stack height, these models are designed to characterize pollutants that are emitted into the atmosphere. The performance of models is evaluated by EPA using actual monitoring data to ensure that the model produces representative concentrations. In fact, models applied in this analysis are conservatively calibrated; they are likely to overstate observed air quality impacts that would be experienced in the vicinity of the plant.

Issue 4: DEQ should adopt the findings of the SHENAIR report

Comment: In October 2007, Virginia Tech completed its SHENAIR air quality study that describes air quality in the Shenandoah Valley. DEQ should use the results of this study in its evaluation of the proposed permit.

DEQ Response: DEQ serves in an ad-hoc advisory role to SHENAIR and frequently participates in conference calls and meetings with this organization. DEQ has evaluated the October 2007 air quality study conducted by Virginia Tech. In fact, DEQ supplied much of the data to Virginia Tech to facilitate its study. Due to the fact that DEQ is thoroughly familiar with both the air quality data and air quality modeling data used in the Virginia Tech analysis, none of the findings in this report are considered innovative.

DEQ disagrees with the SHENAIR report's characterization of air quality in the Shenandoah Valley. Specifically, the report states that "the Shenandoah Valley suffers from poor air quality due to elevated concentrations of ozone and particulate matter concentrations." This statement is misleading.

Although there may be a few days where air quality may reach unhealthy levels for sensitive groups, the Shenandoah Valley is in attainment with the NAAQS for both ozone and fine particulate matter ($PM_{2.5}$). The table below provides current monitoring data illustrating this fact.

Table 3: Design Value Concentrations of Ozone and $PM_{2.5}$ for Shenandoah Valley Monitors 2005-2007

Monitor Location	Pollutant	Averaging Period	Concentration	NAAQS
Page County **Rockingham County**	**$PM_{2.5}$**	**24-hour**	**30 µg/m^3** **32 µg/m^3 (1)**	**35 µg/m^3**
Page County **Rockingham County**	**$PM_{2.5}$**	**Annual**	**12.9 µg/m^3** **13.7 µg/m^3 (2)**	**15.0 µg/m^3**
Frederick County	**Ozone**	**8-hour**	**73 ppb**	**75 ppb**
Page County **Rockbridge County** **Rockingham County**			**73 ppb** **69 ppb** **69 ppb (3)**	

(1) Monitor began operation in 2007. Value represents the 98th percentile 24-hour value for the calendar year.
(2) Monitor began operation in 2007. Value represents the annual arithmetic mean.
(3) Monitor began operation in 2007. Value represents the 4th highest concentration for the calendar year.

Regional modeling, such as that conducted in the SHENAIR study, is performed by DEQ on a regular basis. To create these model simulations, emissions inventory information, including existing stationary sources such as asphalt plants, is prepared by DEQ in cooperation with regional air quality planning organizations. This information is processed through a variety of computer programs and is meshed with meteorological data so that current and future year results for ozone, $PM_{2.5}$, and visibility can be estimated. These tools provide useful information to the planning process and are indeed required by the CAA for a variety of DEQ's planning needs.

DEQ agrees with the SHENAIR report in the broader sense that it is important to evaluate regional air quality, particularly due to the fact that air quality planning for these pollutants involves a wide array of emissions sources and control programs. There are significant control programs that have either been implemented recently or that will be initiated in the near future that will continue to improve air quality in the Shenandoah Valley and throughout Virginia. A few examples are described below:

<u>NO_X SIP Call</u>

Phase I of the NO_X SIP call applies to certain electric generating units (EGUs) and large non-EGUs, including large industrial boilers and turbines, and cement kilns. The States affected by the NO_X SIP call in the Southeast have developed rules for the control of NO_X emissions that have been approved by the EPA. The NO_X SIP call has resulted in a 68 percent reduction in NO_X emissions from large stationary combustion sources. For this analysis, DEQ capped the emissions for NO_X SIP call-affected sources at 2007 levels, and carried forward the capped levels for the 2009 and 2018 future year inventories.

<u>North Carolina Clean Smokestacks Act</u>

Under the Act, enacted in 2002, coal-fired power plants in North Carolina must achieve a 77-percent cut in nitrogen oxide emissions by 2009 and a 73-percent cut in sulfur dioxide by 2013. The reductions achieved by this Act will help reduce fine particulate matter concentrations

transported from North Carolina into Virginia due to the fact that sulfur dioxide is considered a precursor pollutant for fine particulate matter.

Consent Agreements

Several Federal and State consent agreements included in the regional modeling will continue to reduce emissions from stationary sources and improve ambient air quality. Examples include the Virginia Electric and Power Company (also known as Virginia-Dominion Power) agreement to spend $1.2 billion by 2013 to eliminate 237,000 tons of sulfur dioxide and nitrogen oxide emissions each year from eight existing coal-fired electricity generating plants in Virginia and West Virginia, and the American Electric Power agreement to spend $4.6 billion to eliminate 72,000 tons of nitrogen oxide emissions each year by 2016 and 174,000 tons of sulfur dioxide emissions each year by 2018 from sixteen plants located in Indiana, Kentucky, Ohio, Virginia, and West Virginia.

There are many other control programs that are expected to continue to improve air quality in the Shenandoah Valley. A few examples include the Heavy Duty Diesel Engine Standard for On-Road Trucks and Buses (2007), Tier 2 Tailpipe Emissions Standards for on-road vehicles (2005) and non-road diesel engine rules (2007, 2010 and 2012).

The Shenandoah Valley is currently in attainment for all pollutants and the trend in air quality (e.g., ozone, $PM_{2.5}$ and visibility) shows continued improvement. These trends are largely the result of the control measures discussed above.

Issue 5: Air quality/public health impacts caused by the plant

Issue 5a: Potential impacts to human health have not been adequately addressed

Comment: The potential impacts to human health have not been adequately addressed. Some nearby residents have serious health conditions that may be related to plant emissions.

DEQ Response: The City of Lexington and Rockbridge County have been designated as attainment areas for all NAAQS. As previously discussed under Issue 2, air quality modeling has been conducted for this facility which demonstrates that emissions from the plant will not interfere with the attainment of any NAAQS or SAACs.

The CAA requires EPA to establish standards for air concentrations of criteria pollutants that are protective of public health, including the health of sensitive groups such as children and the elderly. Accordingly, EPA promulgated the NAAQS, which specify maximum concentrations for various averaging times below which the air quality is considered acceptable with an adequate margin of safety, and each NAAQS includes both primary and secondary standards. Extensive review is undertaken in the development of each NAAQS. The primary standards are intended to protect human health, including the health of vulnerable citizens – elderly, children, and citizens with chronic illnesses; whereas, the secondary standards are intended to protect public welfare (e.g., damage to vegetation) from any known or anticipated adverse effects associated with the presence of air pollutants. The more stringent of the primary or secondary standards is applicable to the modeling evaluation. The NAAQS have been developed for various averaging periods. The NAAQS for any single pollutant may include either short-term (24 hours or less) standards to address potential acute effects, long-term (generally annual) standards to address potential chronic effects, or both, as appropriate.

Additionally, the modeling analysis of the facility's toxic pollutant emissions demonstrates compliance with the SAACs contained in Virginia's toxics rule, 9 VAC 5 Chapter 60, Article 5, of Virginia's air pollution control regulations. The SAAC for each regulated toxic air pollutant is based on a fraction of the Threshold Limit Value (TLV®) for that pollutant. The TLV® is defined as the maximum airborne concentration of a substance to which the American Conference of Governmental Industrial Hygienists believes that nearly all workers may be repeatedly exposed day after day without adverse effects.

Issue 5b: Recent health effects studies should be considered

Comment: DEQ should consider studies demonstrating greater health effects from PM_{10} *and* $PM_{2.5}$ *pollution that have been recently published in peer-reviewed scientific journals and by the American Lung Association. In order to account for this new information, the most conservative calculations, sensitive receptors, and maximum doses should be used when evaluating plant impacts. The permit should allow for incorporation of more stringent PM standards as they are promulgated.*

DEQ Response: See response to Issue 5a immediately above. The CAA requires that each NAAQS be reviewed every five years, which ensures that the NAAQS reflect the most current health effects data that is available and remain sufficiently protective of public health. For example, the $PM_{2.5}$ and 8-hour ozone standards were recently adopted in response to new data that showed that a large number of vulnerable individuals would benefit from lower, more stringent standards.

Whenever more stringent NAAQS standards are adopted, states are required to develop implementation plans to monitor and assess compliance with the new standards. In areas not meeting the new standards, state implementation plans need to be revised to include additional control measures to reduce emissions from both new and existing sources of emissions in order to bring those areas into attainment with the new standards.

Issue 5c: Emissions of toxins/carcinogens should be evaluated

Comment: Emissions from the plant of greatest concern are the carcinogens: formaldehyde, benzene, and others.

DEQ Response: As discussed in the response to Issue 2, toxic pollutant emissions from this facility are not subject to 9 VAC 5 Chapter 60, Article 5 (Emission Standards for Toxic Pollutants from New and Modified Sources (Rule 6-5)), because the stationary source is in a source category for which EPA has made a formal determination that no regulations or other requirements need to be established pursuant to §112 of the federal Clean Air Act and has published the determination in the source category schedule for standards (see 9 VAC 5-60-300.C.5).

In response to comments received, however, DEQ directed Adams Construction to conduct modeling for the following seven air toxics: formaldehyde, benzene, acrolein, hydrogen chloride, mercury, phosphorus and quinone, which are the air toxics emitted from asphalt plants that may be of greatest concern. As discussed under Issues 2 and 5a, the applicant's modeling efforts demonstrate compliance with the SAACs for all seven of these air toxics.

Issue 5d: The proposed permit regulates only particulate emissions

Comment: "Currently the proposed DEQ permit will regulate only one of the many pollutants emitted by the plant (particulates), and at only one of the several points of discharge (the stack baghouse)…. The total amount of pollution must be addressed to be protective of human health and the environment."

DEQ Response: This assertion is incorrect; the proposed permit that was noticed on June 25, 2008 provides emission limits for six regulated air pollutants that would be emitted from four separate emission units or processes at the plant: total PM, PM_{10}, sulfur dioxide, nitrogen oxides, carbon monoxide, and volatile organic compounds, with separate emission limits for the aggregate dryer, asphalt tank heater, diesel electric generator, and materials handling and storage activities. The revised proposed permit contains similar emission limits.

Issue 5e: DEQ needs to consider other pollutants

Comment: Petition 1 states that DEQ "Need[s] to consider other pollutants".

DEQ Response: This comment appears to follow from the mistaken interpretation reflected immediately above in Issue 5d. As discussed above, the initial permit evaluation considered all relevant criteria pollutants: PM, PM_{10}, SO_2, NO_X, VOCs, and CO. The proposed permit included emission limits for all of these criteria pollutants, and these emission limits were specified in the public notice for the proposed permit. In addition, the subsequent modeling included all of these criteria pollutants (except for VOCs, due to the fact that it is extremely difficult to quantify the impact on ozone concentrations from an individual source of this pollutant and that there is not an acceptable regulatory modeling approach for conducting this analysis). In addition, as discussed previously, the Department also required the applicant to conduct modeling for seven toxic air pollutants, and modeling demonstrated compliance with all seven SAACs.

Issue 5f: Increased pollution from the plant will reduce visibility

Comment: Visibility of the nearby mountains is already reduced from historical distances, and increased pollution from the plant will further reduce visibility.

DEQ Response: The commenters are correct in stating that some of the pollutants emitted by the asphalt plant, specifically sulfur dioxide (SO_2), nitrogen oxides (NO_X) and particulate matter (PM_{10}) are considered visibility-impairing pollutants. For minor sources, DEQ indirectly limits the impact of visibility impairing pollutants from new and modified sources through the application of BACT. In the case of Adams Construction, visibility impacts are minimized by use of a fabric filter/baghouse on the aggregate dryer, wet suppression to control dust from miscellaneous materials handling and storage areas and use of low sulfur fuels. In addition, DEQ regulates visibility impacts on mandatory federal Class I areas through implementation of 9 VAC 5 Chapter 80, Article 8, "Permits for Major Stationary Sources and Major Modifications Locating in Prevention of Significant Deterioration Areas" also referred to as the PSD permit program, and through 9 VAC 5 Chapter 40, Article 52, "Emission Standards for Stationary Sources Subject to Case-by-Case BART Determinations". The Adams Construction Company asphalt plant is not subject to either regulation because it is a minor source of air emissions. Emissions from the asphalt plant are expected to have minimal impact on visibility.

Issue 6: Lexington has unique atmospheric and topographic features

Issue 6a: There are unique atmospheric and topographic features in the Lexington area that need to be considered in this permitting process

Comment: The modeling and overall permitting decision need to account for the unique atmospheric and topographic features around the plant, such as temperature inversions, ground-level fog, stagnant air, elevation, and mountains.

DEQ Response: Although there may be certain aspects of the Lexington area that are unique to its location, these factors have been accounted for in the modeling exercise.

The commenters correctly point out that an inversion can lead to pollution being trapped close to the ground, with possible adverse effects on health. In meteorology, an inversion is a deviation from the normal change of an atmospheric property with altitude and is almost always referred to as a temperature inversion (i.e., an increase in temperature with height as is present in stagnant air and valley fog conditions). It is important to note that inversions are not unique to Lexington, Virginia and while they may be more frequent in mountainous terrain, these conditions can occur in almost all locations. The air quality model accounts for the effects of temperature inversions.

The meteorological data that will be used in the modeling analysis include a wide array of weather conditions. Specifically, the most recent 5 years of meteorological data (as recommended by EPA) collected at the nearest National Weather Service station in Roanoke, Virginia (2003 through 2007) was selected as input to the model. All meteorological data selected for use in the modeling analysis are deemed to be the most representative model-ready data available for the analysis and encompass the types of weather conditions that occur in Lexington, Virginia.

The air quality model also includes the specific topographical features that surround the asphalt plant. These data are derived from United States Geological Survey (USGS) digital elevation models (DEMs) which are used as direct input to the air quality model.

Issue 6b: Relocate the plant to a higher elevation

Comment: The adverse effects of inversions and other stagnant weather conditions on the dispersion of pollutants from the plant could be mitigated by moving the plant from its current elevation of approximately 1000 feet in elevation to a location that is at least 1300 feet in elevation.

DEQ Response: The technical basis for the allegation that the plant's impacts could be mitigated by moving the plant from its current elevation of approximately 1075 feet to a location that is at least 1300 feet in elevation is unclear. There are many factors that affect air quality concentrations, including the magnitude of emissions and release characteristics, meteorology, terrain elevations and plume "downwash" resulting from buildings located in close proximity to an emissions source.

The absolute elevation of a plant is not necessarily as important as the relative elevation of the facility with respect to surrounding terrain. For example, a plant may be located at 1300 feet but surrounded by mountainous terrain which could exacerbate air quality impacts. The terrain features surrounding the asphalt plant are approximately equal to or lower in elevation than the asphalt plant emissions sources. These include the sensitive receptors in the immediate vicinity of the plant (e.g., Sunny Hill Lane, Stonewall Jackson Hospital, Central Elementary School and YMCA).

Issue 6c: Prohibit or limit operations during certain atmospheric conditions

Comment: Localized pollution effects are likely to increase "during inversions and other atmospheric conditions". When these conditions exist, plant operations should be limited or prohibited.

DEQ Response: As discussed previously under Issues 2, 3, and 6a, the modeling that was conducted by the applicant includes scenarios accounting for worst-case meteorological conditions (including inversions) and emissions conditions (such as operating at the maximum permitted level of 300 tons of asphalt production per hour) occurring simultaneously. As discussed previously, the applicant's modeling, which was reviewed by the Department, demonstrates compliance with all relevant NAAQS and SAACs, even under worst-case scenarios.

Issue 7: Site suitability - the asphalt plant is poorly located

Issue 7a: Proximity to a population center, including schools and hospital

Comment: The plant is located in close proximity to an elementary school, a hospital, and the City of Lexington, which is the population center of Rockbridge County. Alternative site locations further away from Lexington should be considered.

DEQ Response: In determining the site suitability of a project during the permit review process as required by § 10.1-1307 E of the Code of Virginia, DEQ follows the State Air Pollution Control Board's September 11, 1987 policy which states that the suitability of a facility to a specific location must be determined by the local governing body, except as to questions involving the air quality regulatory authority of the Board. This position is consistent with the intent of §15.1-2000, Code of Virginia, which charges local governments to make use of planning and zoning as a way to govern community development and economic growth in order to protect public health, safety, and welfare. The Board, therefore, will consider a decision by a local governing body as to the suitability of a proposed new facility or expansion of an existing facility, but it will approve or disapprove a permit application only within the context of air quality considerations.

As discussed throughout this document, DEQ has evaluated the air quality impacts that would result from the proposed permit, and the proposed permit satisfies all applicable air quality requirements set forth in 9 VAC 5 Chapter 80, Article 6. Consequently, the ultimate site suitability determination must be made by the local governing body, and by executing the Local Governing Body Certification Form on April 10, 2008, Rockbridge County has confirmed that the facility is consistent with local ordinances. Please refer to discussion under Issue 13 for additional information on DEQ's site suitability analysis for this project.

Issue 7b: Proximity to national forests and parks

Comment: The evaluation of the proposed permit should account for the plant's proximity to national forests and national parks. DEQ should also coordinate its review of the application with the federal land managers (FLMs) of the National Park Service and National Forest Service, both of which manage public lands nearby.

DEQ Response: Under current state permitting policies and procedures, the subject draft permit is not subject to review by the Federal Land Managers (FLMs) of nearby federal Class I areas. As discussed in Issue 1, the Adams Construction Company's asphalt plant is a minor source of pollution located approximately 20 kilometers west of the James River Face Wilderness Area (JRFWA), which is part of the Jefferson National Forest. The JRFWA, along with the Shenandoah

National Park, which is located farther to the north of the plant site, are both considered mandatory federal Class I areas that receive the highest level of air quality protection in Virginia. DEQ continues to honor agreements10 with the FLMs of the Jefferson Forest Service and Shenandoah National Park in coordinating review of permit applications which may have Class I area air quality impacts. According to these agreements, for minor sources emitting less than 100 tons per year of any one pollutant, only air permit applications for sources located within 10 kilometers of either the JRFWA or SNP are reviewed by the FLMs for impacts on the Class I areas.

Issue 7c: DEQ's characterization of the site as "moderately populated"

Comment: DEQ's Permit Application Site Form [Attachment C to the Engineering Memorandum dated June 17, 2008] states that the area around the site is "moderately populated". The plant is less than one quarter mile from the City of Lexington, which is the population center for Rockbridge County, and this location should be classified as "densely populated".

DEQ Response: DEQ's frame of reference is statewide, and on that basis, the Lexington area is "moderately populated" as compared to highly urbanized areas such as Northern Virginia (including Alexandria City and Arlington County) and Richmond. More importantly, however, this classification on the Permit Application Site Form is for informational purposes only; it does not have any material effect on DEQ's evaluation of the permit application. In other words, no additional permitting review requirements, emissions control technologies, etc., would be required by classifying the site as being in a "densely populated" area instead of a "moderately populated" area.

Issue 8: Air pollution controls are inadequate

Issue 8a: Pollution controls should be upgraded

Comment: The proposed permit maintains existing pollution control requirements for the plant, but pollution control equipment should be upgraded to include the use of "electrostatic or other new control technologies for the lowest achievable emissions rate".

DEQ Response: Prior to the application of any controls, the largest source by far of uncontrolled emissions at the facility is total PM and PM_{10} emissions from the aggregate dryer. The proposed permit requires the use of the existing fabric filter/baghouse, which reduces total PM and PM_{10} emissions from the aggregate dryer by greater than 99.5%. The proposed permit also requires the use of wet suppression or the equivalent for all materials handling activities, which reduces total PM and PM_{10} emissions from materials handling activities by approximately 95%. These very effective emissions control requirements meet the federal requirements for asphalt plants set forth in 40 CFR Part 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities); they also meet the presumptive BACT requirements set forth in DEQ's permit boilerplate for asphalt plants (Virginia DEQ Procedures for Hot Mix Asphalt Facilities – Guidance Document & Emission Factors Version 1.0); and they are consistent with the controls required on asphalt plants of similar size throughout the state. The Department's BACT analysis is provided below.

10 Memorandum of Understanding between United States Department of Agriculture, Forest Service – Jefferson National Forest and Commonwealth of Virginia, Department of Air Pollution Control, March 30, 1993, and Memorandum of Understanding between the Shenandoah National Park and Commonwealth of Virginia, Department of Air Pollution Control, March 31, 1993.

Pursuant to 9 VAC 5-50-260, a BACT review is required. Since this project is being evaluated as a new source, the new source emission thresholds of 9 VAC 5-80-1320 C. apply, per 9 VAC 5-50-260 B. Table 4 below summarizes the net emissions increase (NEI) for the facility. The emissions listed in Table 4 were calculated utilizing current AP-42 emission factors and agency procedures (Chapter 11.1, Hot Mix Asphalt Plants for the aggregate dryer, load-out and silo filling; Chapter 1.3, Fuel Oil Combustion for the asphalt heater; Chapter 3.4, Large Stationary Diesel Engines; and Stone Processing Procedures for miscellaneous emissions from stockpiles, load-out and silo filling). For BACT applicability purposes, NEI is calculated using the proposed throughput limits, but not including any proposed control technologies. The proposed asphalt throughput limit is 200,000 tons per year, which at the maximum rated capacity of 300 tons per hour would result in 667 hours of operation of the asphalt plant. The NEI for the diesel engine is conservatively based on 2925 hours of operation per year. Emissions calculations for the aggregate dryer were made using distillate oil (Nos. 2 and 4 fuel oil) and waste/recycled oil, and the worst-case emissions are reflected in the tables below. The only difference in emissions of criteria pollutants between the distillate oil and the waste/recycled oil is in sulfur oxide (SO_x) emissions, with the waste/recycled oil producing higher SO_x emissions.

As shown in Table 4, the NEI for PM and PM_{10} from the facility exceeds the BACT exemption rate; therefore, BACT is applicable for these pollutants at all emissions units at the facility, per 9 VAC 5-50-260 B. BACT for PM and PM_{10} emissions from the aggregate dryer is the use of a fabric filter/baghouse, which is required under the draft permit (and which is already in use at the facility). BACT for PM and PM_{10} emissions from the miscellaneous materials handling and storage sources is the use of wet suppression or approved equivalent, which is required under the permit. In light of the very low emissions of PM and PM_{10} from the asphalt heater and diesel-powered electric generator, BACT for emissions of PM and PM_{10} from these emissions units is simply proper operation and maintenance of these units.

The NEI for all other pollutants from all other emissions units are below their respective BACT exemption rates; therefore, BACT does not apply to the other emission units. See Table 4 below. However, the facility's generator includes an ignition timing retard device that reduces the formation of NOx, and the company voluntarily accepted a reduction in the maximum fuel sulfur content for all distillate oil used at the facility from 0.5% to 0.05%. Distillate oil is the only fuel authorized for the diesel-powered electric generator and asphalt storage tank heater, and the emission limits specified in the draft permit for these two emission units reflect this reduced fuel sulfur content. Historically distillate oil has been the primary fuel used by the company in the aggregate dryer, and the draft permit includes the same 0.05% fuel sulfur limit for all distillate oil used in the aggregate dryer. However, the draft permit also authorizes the use of waste/recycle fuel oil with a maximum sulfur content of 0.5% in the aggregate dryer, so the sulfur dioxide emission limits for the aggregate dryer specified in the draft permit reflect this higher fuel sulfur content.

Table 4: BACT Applicability – Uncontrolled Emissions

Facility-Wide Uncontrolled Emissions			
Pollutant	**NEI (tons/year)**	**BACT Applicability Thresholds (tons/year)**	**BACT Applicable**
PM	2818	25	Yes
PM_{10}	658	15	Yes

SO_x	**6.4**	**40**	**No**
NO_x	**18.9**	**40**	**No**
CO	**18.7**	**100**	**No**
VOC	**4.5**	**25**	**No**

Regarding the use of an electrostatic precipitator (ESP) for PM control, DEQ is unaware of any example of an ESP in use on an aggregate dryer at a hot mix asphalt facility. Moreover, DEQ has not been provided with any data (nor has it found any through its own research) indicating that an ESP – or any other emissions control technology – would be more effective than a fabric filter/baghouse for reducing PM emissions from the aggregate dryer at an asphalt plant.

Regarding the term "lowest achievable emission rate" (commonly referred to as LAER), this term has a very specific regulatory meaning, and it applies only to major sources in nonattainment areas. This asphalt plant is neither a major source as defined by EPA or DEQ regulations, nor is it located in a nonattainment area. Therefore, LAER is not applicable to this facility.

Issue 8b: The effectiveness of the baghouse needs to be verified

Comment: The fabric filter/baghouse should be tested to ensure it will work adequately with the increased level of production and emissions.

DEQ Response: Condition 23 of the proposed permit that was noticed on June 25, 2008, establishes a requirement for stack testing for PM and PM_{10} emissions from the baghouse. This testing will confirm that the assumed emission reductions from the baghouse will in fact be achieved.

Issue 8c: The plant should reduce or eliminate fugitive emissions

Comment: The Company's operations and the air permit conditions should be upgraded to eliminate or at least reduce fugitive emissions, including emissions from truck loading activities.

DEQ Response: The proposed permit establishes wet suppression or the equivalent as BACT for all materials handling and storage operations, including truck loadout and loading activities. This will achieve an approximately 95% reduction in PM emissions from these operations as compared to uncontrolled emissions. Absent a total enclosure over all materials handling and storage operations, it would be impossible to "eliminate" all fugitive emissions from the facility. As noted in the response to Issue 8a above, the emissions controls set forth in the proposed permit meet the federal requirements for asphalt plants set forth in 40 CFR Part 60, Subpart I (Standards of Performance for Hot Mix Asphalt Facilities) and they also meet the presumptive BACT requirements set forth in DEQ's permit boilerplate for asphalt plants (Virginia DEQ Procedures for Hot Mix Asphalt Facilities – Guidance Document & Emission Factors Version 1.0).

Issue 8d: Deposition from the asphalt plant?

Comment: I live near the asphalt plant, and I have thick dust and/or a black tar-like substance on my house. Is this coming from the asphalt plant? Will I have more of it if production increases?

DEQ Response: As a result of testimony received during the July 31, 2008 public hearing, DEQ conducted an investigation of the allegation that black tar from the asphalt plant was accumulating on local residences. DEQ's investigation, which is documented in Attachment 3, was unable to substantiate these claims. On August 14, 2008, DEQ conducted site visits to two residences located on Old Farm Road, approximately 1 mile from the asphalt plant, and another location on Sunny Hill Road, which is immediately adjacent to the asphalt plant. The DEQ inspector conducting the investigation noted small black spots on a wooden deck and on porch railings that appear to be due to mold or insects at the Old Farm Road addresses. At the Sunny Hill Road location, black particles from a water bucket were collected and sent to the DEQ Air Monitoring Division in Richmond for microscopic analysis. The results of this analysis, which is also contained in Attachment 3, concluded that at least one of the particles appeared to be of biological origin while several others appeared to be metal covered in iron oxide.

The proposed permit contains adequate provisions to prevent deposition of asphaltic materials and to mitigate fugitive dust from the facility. Please refer to discussion in Issues 8a, 8b and 8c for additional information concerning air pollution control requirements.

Issue 9: Odors from the plant are a nuisance

Comment: Local residents can smell diesel fumes and/or asphalt fumes when the plant is operating, and increased production will increase the odor impacts.

DEQ Response: DEQ-VRO's air compliance staff researched the complaint history for Adams Construction, and in the time that this facility has been in its present location (since 1999), prior to publication of the public notice for this proposed permit, DEQ had received one complaint regarding smoke and/or odor allegedly coming from this facility. This complaint was lodged on November 29, 2006, and upon investigation by VRO, it was determined that the asphalt plant had minimal production of only 30 tons on the day of the complaint (as compared to the facility's maximum permitted production rate of 300 tons per hour) and that the smoke was observed by the complainant more than two hours after the plant had ceased operations for the day. Consequently, it appears that the source of the smoke reported likely was not Adams Construction. See Attachment 1 for additional information.

In addition, since the July 31, 2008 public hearing, two additional odor complaints have been received on August 25, 2008 and September 18, 2008. In both instances, the complainant noticed a strong smell of diesel fumes from the asphalt plant between 7:00 a.m. and 10:30 a.m. which was attributed to cool, foggy weather conditions. Apparently, the odor dissipated later in the day with the lifting of the fog. As detailed in Attachment 2, DEQ's subsequent investigation which entailed surveillance activities on August 25, September 18, September 22 and September 23, 2008 was unable to detect excessive odors from the facility.

In response to public comments received, DEQ has added Conditions 39 through 42 to the proposed permit to address potential odor impacts. These conditions prohibit the facility from emitting objectionable odors; require the company to use an odor suppression or masking agent in their asphalt production process (which apparently the company has been using voluntarily for some time) or to obtain written approval from DEQ prior to using an alternative method of odor control; require the

company to notify DEQ of any odor complaints received and corrective actions taken to mitigate odors from the facility; and require the company to maintain records of its odor suppression agent usage and odor complaints received.

Issue 10: Proposed permit does not regulate emissions from truck traffic

Comment: Trucks are used to haul all raw materials to the plant and to haul all asphalt off-site, and the proposed permit does not address the impacts from current levels of truck traffic or any increased truck traffic that would be associated with increased asphalt production. There should be strict enforcement of no-idling conditions, and/or limiting the number of trucks, and/or limiting trucks to those that meet the new pollution control regulations. In addition, the use of rail transportation should be considered to minimize pollution from truck traffic.

DEQ Response: DEQ's air permitting regulations provide only for the regulation of emissions from stationary sources; emissions from fuel combustion in mobile sources associated with any facility – whether trucks, trains, or ships – are not currently regulated by DEQ air permits. However, the proposed permit (both the version noticed on June 25, 2008 and the current draft) requires the following measures to minimize fugitive dust emissions from asphalt plant truck traffic:

- The use of wet suppression or the equivalent for all materials handling and loadout activities, which includes the loading and unloading of materials from trucks;
- Measures to limit dust emissions from the roadways on the site on which trucks travel; and
- Reasonable precautions to prevent spilling of materials on public roads.

See Condition 7 of the current proposed permit.

Issue 11: Noise from the plant is a nuisance

Comment: Noise from the plant is disturbing, especially during nighttime operations, and increased production will increase the noise impacts.

DEQ Response: DEQ does not regulate noise impacts from facilities. Any regulation of noise decibel levels or limits on nighttime operation must be imposed by the local governing body, not DEQ.

Issue 12: Duty of government to prevent pollution

Comment: Government generally has an obligation to protect the public from pollution, and specifically, Article 11 of the Virginia Constitution provides for clean air. The proposed air permit for the asphalt plant meets neither obligation.

DEQ Response: Article 11, Section 1 of the Constitution of Virginia sets forth the Commonwealth's policy regarding clean air. It provides in relevant part: "To the end that people have clean air…it shall be the Commonwealth's policy to protect its atmosphere…from pollution…." Section 2 of Article 11 describes how this policy will be implemented. It provides in relevant part: "In the furtherance of such policy, the General Assembly may undertake…the protection of its atmosphere…from pollution…by agencies of the Commonwealth…." In accordance with Article 11, Section 2, the General Assembly has enacted the Virginia Air Pollution Control Law (Code of Virginia §10.1-1300 et seq), which provides the State Air Pollution Control Board ("Board") with the responsibilities and authorities to control air pollution. Pursuant to §10.1-1308, Code of Virginia, the

Board has promulgated numerous regulations to control air pollution, including 9 VAC 5 Chapter 80, Article 6, Permits for New and Modified Stationary Sources. The proposed permit for Adams Construction has been developed in accordance with the requirements of this Article 6, and as such, satisfies the constitutional policy regarding clean air.

Issue 13: Coordination between DEQ and the County

Issue 13a: DEQ and the County should coordinate their review of this plant

Comment: DEQ's air permitting process addresses air pollution issues, such as control technologies and emission limits, while a separate County process addresses zoning-related aspects, such as location of the plant and hours of operation. Since these functions are interdependent – i.e., emissions that may be acceptable in a remote industrial area would not be acceptable near a population center – they must be considered together despite the division of authority between the two governmental bodies. Moreover, the property owner and county apparently have agreed that the plant is to be relocated to a nearby location in the near future, so that future location should be considered during this permitting action, or this permit should be delayed until the plant is to be moved.

DEQ Response: As discussed in Issue 7a, according to the current State Air Pollution Control Board site suitability policy (September 11, 1987), in evaluating the suitability of a proposed facility to a specific location as required by §10.1-1307 E of the Code of Virginia, DEQ limits its review to the following questions concerning the regulation of air quality:

1. Air Quality characteristics and performance requirements defined by Board regulations;

2. The health impact of air quality deterioration which might reasonably be expected to occur during the grace period allowed by Board regulations or the permit conditions to fix malfunctioning air pollution control equipment; and

3. Anticipated impact of odor on surrounding communities or violation of the Board's Odor Rule.

§15.1-2000 of the Code of Virginia charges local governments to make use of planning and zoning as a way to manage community development and growth in order to protect public health, welfare, and safety. It is beyond the authority of the Board to become a step in the appeal process for individuals who wish to challenge local government decisions concerning planning and zoning.

In addition to the Board's 1987 policy, 1999 interim agency guidance directed DEQ staff to document its consideration of each of the criteria in Code 10.1-1307.E for each application it evaluates. For the Adams application, DEQ's review of the factors in 10.1-1307.E is documented in Section X of the engineering evaluation (pages 10 through 11) and is summarized below:

A. The character and degree of injury to, or interference with safety, health, or the reasonable use of property which is caused or threatened to be caused:

The activities regulated in this permit have been evaluated consistent with 9 VAC 5-50-260 (BACT) and 5-80-1180 (Standards and conditions for granting permits), and have been determined to meet these standards where applicable. Even though the controlled emissions authorized under this permit are defined as de minimis consistent with existing DEQ policy and therefore would not normally be modeled, the Department has required the applicant to conduct modeling for all relevant criteria pollutants and for seven air toxics.

B. The social and economic value of the activity involved:

The social and economic value of the facility has been evaluated relative to local zoning requirements. The local official has deemed this activity not inconsistent with local ordinances. The signed Local Government Form is included in the permitting file.

C. The suitability of the activity to the area in which it is located:

Consistent with the Board's Suitability Policy dated 9/11/87, the activities regulated in this permit are deemed suitable as follows:

1. Air Quality characteristics and performance requirements defined by SAPCB regulations:

   This permit is written consistent with existing applicable regulations. Although air quality modeling is not required under DEQ regulations or guidance for a minor source with an emissions profile such as that proposed for this facility, nonetheless in response to comments, DEQ required the company to conduct air quality modeling for criteria and toxic pollutants.

2. The health impact of air quality deterioration which might reasonably be expected to occur during the grace period allowed by the Regulations or the permit conditions to fix malfunctioning air pollution control equipment:

   Condition 32 of the permit requires the facility to notify the Regional Office within 4 business hours of any malfunction.

3. Anticipated impact of odor on surrounding communities or violation of the SAPCB Odor Rule:

   No violation of Odor requirements is anticipated as a result of this permit action; however, in response to public comments Conditions 39-42 have been added to the permit to address potential odor impacts from the facility.

D. The scientific and economic practicality of reducing or eliminating the discharge resulting from the activity.

The state's minor NSR program requires consideration of levels of control technology that are written into regulation to define the level of scientific and economic practicality for reducing or eliminating emissions. By properly implementing the Regulations through the issuance of this permit, the staff has addressed the scientific and economic practicality of reducing or eliminating emissions associated with this project.

The draft permit for Adams Construction is consistent with the Board's regulations and policy concerning the three air quality issues listed above for its present location at 90 Flower Lane near Lexington. Additionally, by executing the Local Governing Body Certification Form on April 10, 2008, Rockbridge County has indicated the facility is consistent with local ordinances at this location.

Regarding a potential move of this portable facility to another location in the future, DEQ cannot evaluate hypothetical potential future operating scenarios; it can only evaluate the operating scenarios set forth by the applicant in its permit application, and Adams Construction has only requested authorization to continue operating at its current location on 90 Flower Lane. However, prior to any future relocation of the facility, the company would need to apply for authorization to do so, in accordance with Conditions 36 and 37 of the proposed permit. As provided in Condition 36, DEQ would evaluate any such future request on a case-by-case basis. This evaluation would include the submission of another Local Governing Body Certification form indicating that the facility is consistent with local ordinances at the new location.

Issue 13b: Validity of the Local Governing Body Certification (LBGC) Form

Comment: There is reasonable debate whether the LGBC form, which certifies that the proposed facility is consistent with local ordinances, was correctly issued by Rockbridge County for two reasons: (i) the landowner has publicly stated his intent to move the facility to another nearby location, and (ii) the County issued the LGBC form without allowing any public comment. A lawsuit has been filed to challenge the issuance of the LGBC form.

DEQ Response: DEQ has not been provided with a copy of the referenced lawsuit. However, based upon conversations with Sam Crickenberger, Director of Planning and Zoning for Rockbridge County, DEQ understands that the referenced lawsuit involves a prior zoning action by the County regarding the Charles W. Barger Quarry. While this prior zoning action apparently authorizes the operation of an asphalt plant within Barger's Quarry at some time in the future, that authorization is not relevant to the current operation of Adams Construction's asphalt plant at its current location at 90 Flower Lane, which is not within the quarry. As discussed immediately above, any future move by Adams Construction's asphalt plant would be subject to DEQ review and approval at that time. DEQ is not aware of any deficiencies regarding the LGBC form that Adams Construction included in its application for the current proposed air permit action. Consequently, DEQ disagrees with the commenter that there is reasonable debate whether the LGBC form was properly issued by the County for this proposed permit.

Issue 14: Economic impacts from existing and increased production

Comment: Tourism generates a major tax revenue stream for the local area – approximately $2.5 million per year – and increased operation of the plant may adversely impact tourism. In addition, the asphalt plant is already reducing property values in its vicinity, and increased production will further reduce property values.

DEQ Response: It is difficult to quantify either the positive or negative economic impacts that an industrial facility will have on an area through tax revenues, direct job creation, and the associated economic activity attributable to the facility's operation and the spending of its workers. In any event, DEQ lacks the legal authority to deny an air permit based on economic factors not related to the application of BACT. These impacts instead are to be considered, if at all, by the local governing body when it authorizes the operation of the facility.

Issue 15: In favor of increased asphalt production

Issue 15a: Supports the proposed permit

Comment: The County needs more blue-collar jobs. The county will also benefit from safer roads resulting from the increased asphalt production. The proposed permit ensures compliance with all applicable federal and state regulations.

DEQ Response: The public participation process is designed to solicit input from all concerned citizens. DEQ appreciates comments in support of the project as well as comments expressing air quality concerns.

Issue 15b: Reduction in requested asphalt production limit

Comment: The applicant requests to reduce the increase in the annual asphalt production limit specified in the permit from 400,000 tpy to 200,000 tpy.

DEQ Response: DEQ has revised the proposed permit accordingly.

Issue 16: Extension of the public comment period

Comment: The public comment period closed on the same day as the public briefing, and prior to completion of the air quality modeling. DEQ should extend the comment period so the public can submit comments that account for information provided at the public briefing, and also so the public can comment on the air quality modeling once it is completed.

DEQ Response: DEQ disagrees that the public comment period should have been extended. DEQ provided a public comment period that spanned five weeks, from June 26, 2008 through July 31, 2008. DEQ also held a public hearing on July 31. A total of ninety-two individuals and two organizations participated in this public participation process. As has been detailed in this Response to Comments document and in the Public Participation Report, the issues that were raised span seventeen broad issue categories, many of which have several distinct subparts. Moreover, DEQ has agreed to send this proposed permit to the Board for its consideration (which is addressed in Issue 17 below), which will allow an additional opportunity for public participation. Accordingly, an extension of the original comment period would have served no useful purpose, and would have only unnecessarily delayed final action on this proposed permit.

Regarding the completion of air quality modeling after the close of the public comment period, DEQ does not agree with the commenters that an additional public comment period to review the modeling is necessary because these analyses are not a required element of the case determination. Moreover, the applicant's modeling, which was reviewed by DEQ, was conducted using EPA-approved models and EPA and DEQ-approved modeling guidance. All modeling results demonstrate compliance with the relevant NAAQS and SAACs. DEQ's summary of the modeling analysis begins on page 51 of this document.

Issue 17: Board consideration of the proposed permit

Comment: The State Air Pollution Control Board should evaluate this proposed permit and make the final determination on the permit.

DEQ Response: 9 VAC 5-170-180 C provides that the Board "may exercise its authority for direct consideration of permit applications in cases where one or more of the following issues is involved in the evaluation of the application: (i) the stationary source generates public concern relating to air quality issues…." As requested by the commenters, DEQ has referred this proposed permit to the Board for its consideration pursuant to this provision.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Air Data Analysis and Planning

629 East Main Street, Richmond, VA 23219
8th Floor **804/698-4000**

To: Sharon Foley, Air Permit Manager (VRO)

From: Mike Kiss, Coordinator - Air Quality Assessments Group (AQAG)

Date: November 14, 2008

Subject: Technical Review of the Air Quality Analysis in Support of the Permit Application for Adams Construction (Registration #81607)

Copies: Kevin Covington (VRO), Bobby Lute (AQAG)

I. Project Background

This memo summarizes the DEQ Air Quality Assessments Group (AQAG) review of modeling conducted by Adams Construction Company (Adams Construction, the company, or the applicant). The initial modeling protocol for this project was received by the AQAG on September 9, 2008 and several comments were provided to the applicant during the period September 15, 2008 through November 5, 2008. The final air quality analyses were received by the AQAG on November 6, 2008. DEQ modeling staff reviewed the submittal and conducted additional modeling runs to verify all results.

Adams Construction Company has had a portable asphalt plant located near the Barger Quarry in Lexington, Virginia for several years. This plant operates under air permits dated March 29, 1993 (asphalt plant) and January 24, 1994 (diesel electric generator) that were issued by the DEQ South Central Regional Office (SCRO). Responding to a request by the DEQ Valley Regional Office (VRO), Adams Construction submitted an application to change the home base of this equipment to its current location in Lexington, which is within VRO's jurisdiction. This presents the somewhat unusual situation of a new (i.e., greenfield) air permit being issued for an existing facility.

The controlled, facility-wide emissions of all criteria pollutants fall below the modeling thresholds contained in the DEQ New Source Review Permits Program Manual (rev. April 1, 2002) (see Table 1 below). Therefore, modeling is not required for any criteria pollutants pursuant to this agency policy.

Table 1
Facility-Wide Controlled Emissions

Pollutant	**Total Annual Emissions (tons/yr)**	Modeling Exemption Level (tons/yr) (1)	Is Modeling Required?
PM	5.0	25	No
PM_{10}	2.9	15	No
SO_2	6.4 (2)	40	No
NO_x	18.9	40	No
CO	18.7	100	No
VOC	4.5	40	No

[1] From modeling thresholds described in the *DEQ New Source Review Permits Program Manual (rev. April 1, 2002)*, pp.65-67.

[2] Modeling results were generated using the draft SO_2 permit limit of 8.2 tons per year.

However, in response to public comment requesting air quality modeling, VRO staff has required Adams Construction to conduct air quality modeling for all criteria pollutants.

On February 12, 2002, EPA delisted from the MACT program the asphalt concrete manufacturing major source category. In addition, on November 8, 2002, EPA delisted from the MACT program the asphalt hot-mix production area source category. Accordingly, the state toxics regulations in 9 VAC 5-60-300 do not apply pursuant to 9 VAC 5-60-300 C.5.

However, in response to public comments, VRO staff directed the applicant to evaluate impacts from the following seven air toxics that are of potential concern from hot mix asphalt plants: formaldehyde, benzene, acrolein, hydrogen chloride, mercury, phosphorus, and quinone.

The modeling of PM_{10} was used as a surrogate for demonstrating compliance for $PM_{2.5}$, pursuant to DEQ Air Guidance Memo No. APG-307 *("Interim Implementation of New Source Review for $PM_{2.5}$"*, October 12, 2006). Specifically, a compliance demonstration with the PM_{10} NAAQS represents a compliance demonstration with the $PM_{2.5}$ NAAQS.

II. Modeling Methodology

The air quality modeling analysis conducted conforms to 40 CFR Part 51, Appendix W (*Guideline on Air Quality Models*) and was performed in accordance with the approved

modeling methodology included in the protocol and as amended by the AQAG. The air quality model used was the most recent version of the AERMOD modeling system (Version 07026). The AERMOD modeling system is considered a "preferred model" by EPA as described in 40 CFR Part 51, Appendix W.

The meteorological data that were used in the modeling analysis include a wide array of weather conditions. Specifically, the most recent 5 years of meteorological data (as recommended by EPA) collected at the nearest National Weather Service station in Roanoke, Virginia (2003 through 2007) was selected as input to the model. These data are deemed to be the most representative data readily available for input to AERMOD and encompass the types of weather conditions that occur in Lexington, Virginia.

DEQ meteorologists selected the following ambient air quality monitoring data for use in the modeling analysis:

Table 2
Ambient Air Quality Data Used in the Modeling Analysis

Pollutant	Averaging Period	Concentration ($\mu g/m^3$)	Location/Year
PM_{10}	24-hr	32	Roanoke Cherry Hill, 2007
CO	1-hr	4600	Roanoke Round Hill, 2007
	8-hr	3680	Roanoke Round Hill, 2007
NO_2	Annual	26.5	Rockingham County, 2005
SO_2	3-hr	55.0	Roanoke Vinton, 2006
	24-hr	26.2	Roanoke Vinton, 2007
	Annual	7.86	Roanoke Vinton, 2005

Selection of these monitoring stations was based on several EPA criteria, including the following:

11. Population density and degree of urbanization (including commercial and industrial development)
12. Traffic and commuting patterns
13. Growth rates and patterns
14. Meteorology (weather/transport patterns)
15. Geography/topography (mountain ranges or other air basin boundaries)

The selection and use of these data were deemed to adequately represent, or conservatively overstate, levels of existing background air quality in the area surrounding the plant. Both the Rockingham County and Roanoke County monitors are located in areas that are prone to relatively higher air quality concentrations than the Rockbridge/Lexington area. For example, the current 8-hour ozone design value for the Roanoke Metropolitan Statistical Area (MSA) for the period 2005 through 2007 is 76 parts per billion (ppb) whereas the design value in Rockbridge County for the same period is much lower at 69 ppb. Ozone concentrations also tend to be higher in Rockingham County when compared to Rockbridge County. Similarly, particulate matter concentrations are also greater in

Roanoke than other locations in the Shenandoah Valley. This is due in part to the Roanoke monitor being located in a geographic area surrounded by mountains which can enhance monitored concentrations.

In addition to the inclusion of background concentrations, nearby sources were explicitly modeled for SO_2, PM_{10} and NO_2 because these sources of air emissions might cause a "significant concentration gradient" in the vicinity of Adams Construction as defined in Section 8.2.3 of the *Guideline on Air Quality Models*. The facilities evaluated include Charles W. Barger & Son Construction (quarry), Shenandoah Hardwood Lumber Company, Virginia Military Institute, Washington & Lee University, Rockingham Asphalt, Inc., Bontex, Inc., Painter Space Print, and Fitzgerald Lumber & Log Company, Inc. Lastly, no multi-source modeling was conducted for CO since none of the nearby sources is expected to cause a "significant CO concentration gradient" in the vicinity of Adams Construction. CO air quality impacts tend to occur in the "near-field" of a plant and any small contribution from nearby sources would be adequately accounted for in the selected background concentrations.

III. Modeling Results

A. Criteria Pollutant NAAQS Compliance Demonstration

The NAAQS analysis includes emissions from the facility, emissions from nearby existing sources for NO_2, SO_2, and PM_{10}, and ambient background ambient air concentrations. Table 3 shows the maximum predicted concentrations from Adams without consideration of nearby sources. Table 4 presents the total impact from all sources along with the contribution of Adams to each maximum predicted concentration. All results demonstrate compliance with the NAAQS.

Table 3
NAAQS Compliance Demonstration Results
Maximum Predicted Concentrations for Adams Construction

Pollutant	Averaging Period	Maximum Predicted Concentration from Facility (µg/m^3)	Ambient Background Concentration (µg/m^3)	Total Concentration (µg/m^3)	NAAQS (µg/m^3)
NO_2	Annual (1)	6.15	26.5	32.55	100
CO	1-hour (2)	618.25	4600	5218.25	40000
	8-hour (2)	212.33	3680	3892.33	10000
SO_2	3-hour (2)	151.88	55	206.88	1300
	24-hour (2)	39.78	26.2	65.98	365
	Annual (1)	3.09	7.86	10.95	80
PM_{10}	24-hour (3)	97.53	32	129.53	150

[1] The NAAQS design value is the highest concentration for all modeled time periods.

[2] The NAAQS design value is the highest-second-highest concentration for all modeled time periods.
[3] The NAAQS design value is the highest-sixth-highest concentration for the modeled 5-year period.

Table 4
NAAQS Compliance Demonstration Results
Total Maximum Predicted Concentrations for All Sources

Pollutant	Averaging Period	Maximum Concentration for All Sources ($\mu g/m^3$)	Facility Contribution to Maximum Concentration ($\mu g/m^3$)	Ambient Background Concentration ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
NO_2	Annual (1)	10.86	0.05	26.5	37.36	100
	3-hour (2)	450.62	0.15	55	505.62	1300
SO_2	24-hour (2)	104.32	0.01	26.2	130.52	365
	Annual (1)	3.25	3.09	7.86	11.11	80
PM_{10}	24-hour (3)	97.91	97.53	32	129.91	150

[1] The NAAQS design value is the highest concentration for all modeled time periods.
[2] The NAAQS design value is the highest-second-highest concentration for all modeled time periods.
[3] The NAAQS design value is the highest-sixth-highest concentration for the modeled 5-year period.

Lastly, AQAG staff conducted additional diagnostic modeling to determine the emission source(s) which contribute to the relatively high PM_{10} concentrations. It was determined that approximately 87 percent of the total design value concentration is attributable to roadway emissions resulting from truck traffic at the Adams site. These were estimated using unpaved industrial roadway emission factors in AP-42 (Section 13.2.2 – Unpaved Roads) and applying the appropriate control efficiency of 90 percent for dust suppression. It is important to note that AERMOD's ability to simulate air quality impacts from area sources (storage piles, material handling, and paved/unpaved road emissions) is limited. EPA has indicated that the lack of a plume meander feature for area sources may lead to an overestimation of the air quality impacts. EPA has formed an AERMOD Implementation Workgroup to address these issues as well as many others identified by the modeling community. The expectation is that this process will lead to model improvements. In the interim, caution must be exercised in

the interpretation of AERMOD results based on known biases. Use of air quality monitoring is a method that can be used to examine the reliability of model output. The 24-hour PM_{10} air quality impacts are graphically depicted in Figure 1.

B. Toxic Pollutant SAAC Compliance Demonstration

Since asphalt concrete manufacturing and asphalt hot-mix production were removed from regulation under Section 112 of the Clean Air Act, an ambient air quality impact analysis for toxic pollutants from the facility was not required. However, as directed by VRO staff, modeling was conducted for formaldehyde, benzene, acrolein, hydrogen chloride, mercury, phosphorus, and quinone and the predicted concentrations for each of these toxic pollutants were below their respective Significant Ambient Air Concentrations (SAAC). Table 5 summarizes the toxic pollutant modeling results.

Table 5
SAAC Compliance Demonstration Results
Maximum Predicted Concentrations for Adams Construction

Compound	Predicted 1-Hour Average Concentration ($\mu g/m^3$)	1-Hour SAAC ($\mu g/m^3$)	Predicted Annual Average Concentration ($\mu g/m^3$)	Annual SAAC ($\mu g/m^3$)
Formaldehyde	13.59	62.5	2.3E-02	2.4
Benzene	1.72	1,600	2.8E-03	64
Acrolein	0.11	17.25	1.2E-04	0.46
Hydrogen Chloride	0.91	187.5	---	N/A
Mercury	0.01	0.5	1.0E-05	0.02
Phosphorus	0.12	5	1.2E-04	0.2
Quinone	0.69	22	6.8E-04	0.88

IV. Conclusions

All modeling results demonstrate compliance with the applicable NAAQS and SAAC. Consequently, the proposed permit limits are adequate to meet existing air quality standards and the permit may be issued pursuant to 9 VAC 5-80-1180 of the State Regulations.

STATIONARY SOURCE PERMIT TO INSTALL AND OPERATE

This permit includes designated equipment subject to New Source Performance Standards (NSPS).

This permit supersedes your permits dated March 29, 1993 and January 24, 1994 for this facility.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Adams Construction Company
P.O. Box 12627
Roanoke, VA 24027
Registration No.: 81607
Plant ID No.: 51-163-81607

is authorized to install and operate

a portable parallel flow drum mix asphalt concrete plant,
with a rated capacity of 300 tons per hour

located at

90 Flower Lane (Route 744)
Lexington, Virginia 24450

in accordance with the Conditions of this permit.

Approved on ***- Draft -***

Deputy Regional Director, Valley Region

Permit consists of 14 pages.
Permit Conditions 1 to 42.

INTRODUCTION

This permit approval is based on the permit application dated March 6, 2008, and supplemental information dated April 10, 2008, July 25, 2008, August 4, 2008, and November 14, 2008. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-10 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses ( ) after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

PROCESS REQUIREMENTS

1. **Equipment List** - Equipment at this facility consists of the following:LINK G3

Equipment to be installed:			
Reference No.	**Equipment Description**	**Rated Capacity**LINK G3A	**Federal Requirements**LINK G3B
1	One portable parallel flow drum mix asphalt concrete plant which includes an aggregate dryer with a distillate oil and waste/recycled oil-fired burner and a liquid asphalt storage tank heater	300 tons per hour (parallel flow drum mix plant) 96.8 MMBtu/hr (aggregate dryer) 1.6 MMBtu/hr (asphalt heater)	NSPS, 40 CFR 60 Subpart I
2	One portable diesel-powered electric generator	676 Hp/434 kW (output) and 1.928 MMBtu/hr (heat input)	--

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit.LINK G3D
(9 VAC 5-80-1180 D 3)

2. **Emission Controls** – Particulate emissions from the aggregate dryer shall be controlled by a fabric filter/baghouse. The fabric filter shall be provided with adequate access for inspection and shall be in operation whenever the aggregate dryer is operating.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

3. **Emission Controls** – Nitrogen oxide emissions from the diesel-powered electric generator shall be controlled by ignition timing retard. The ignition timing retard shall be maintained according to the manufacturer's specifications over the entire life of the engine. In addition, the permittee may only change those settings that are approved by the manufacturer.
(9 VAC 5-80-1180)

4. **Monitoring Devices -** The fabric filter shall be equipped with a device to continuously measure the differential pressure drop across the fabric filter. The device shall be installed in an accessible location and shall be maintained by the permittee such that it is in proper working order at all times. Each monitoring device shall be installed, maintained, calibrated and operated in accordance with approved procedures which shall include, as a minimum, the manufacturer's written requirements or recommendations. Each monitoring device shall be provided with adequate access for inspection and shall be in operation when the fabric filter is operating.
(9 VAC 5-80-1180 D)

5. **Monitoring Device Observation -** To ensure good performance, the monitoring device used to continuously measure and record the differential pressure drop across the fabric filter shall be observed by the permittee with a frequency of not less than once per day. The permittee shall keep a log of the observations from the fabric filter monitoring device.
(9 VAC 5-80-1180 D)

6. **Emissions Testing -** The permitted facility shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested at the appropriate locations and safe sampling platforms and access shall be provided.
(9 VAC 5-80-1180 and 9 VAC 5-50-30 F)

7. **Fugitive Dust and Fugitive Emission Controls** – Fugitive dust and fugitive emission controls shall include the following, or equivalent as approved by DEQ:

   a. Dust from all material handling and load-outs shall be controlled by wet suppression or equivalent.

   b. All material being stockpiled shall be kept adequately moist to control dust during storage and handling or covered at all times to minimize emissions.

   c. Application of asphalt, water, or suitable chemicals on dirt roads and other surfaces which may create airborne dust; paving of roadways; and maintenance of roadways in a clean condition.

   d. Reasonable precautions shall be taken to prevent deposition of dirt on public roads and subsequent dust emissions. Dirt, product, or raw material spilled or tracked onto paved surfaces shall be promptly removed to prevent particulate matter from becoming airborne.

   (9 VAC 5-50-90, 9 VAC 5-50-260, and 9 VAC 5-80-1180)

OPERATING LIMITATIONS

8. **Operating Hours -** The diesel electric generator shall not operate more than 2925 hours per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. (9 VAC 5-80-1180)

9. **Production -** The production of asphalt concrete shall not exceed 200,000 tons per year, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. (9 VAC 5-80-1180)

10. **Fuel Throughput** - The maximum fuel throughput for the fuel-burning process equipment is as follows:

    a. Aggregate dryer: 400,000 gal/yr

    b. Liquid asphalt storage tank heater: 55,000 gal/yr

    Compliance with the annual limits shall be calculated monthly as the sum of each consecutive 12 month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.
    (9 VAC 5-80-1180)

11. **Fuels** - The following fuels are approved for specific process equipment:

    Aggregate dryer: No. 2 fuel oil, No. 4 fuel oil, and waste/recycled oil;

    Liquid asphalt storage tank heater: No. 2 fuel oil; and

    Diesel electric generator: No. 2 fuel oil.

    Any change in fuel may require a permit to modify and operate.
    (9 VAC 5-80-1180)

12. **Fuel Specifications** - The approved fuels shall meet the following specifications:

    DISTILLATE OIL which meets the American Society for Testing and Materials ("ASTM") D396 specifications for Numbers 1, 2, or 4 fuel oil:

Maximum sulfur content (weight percent) per shipment	0.05 %

    WASTE/RECYCLED OIL:

Maximum sulfur content (weight percent) per shipment	0.5 %
Maximum halogen (as chlorine) content (parts per million)	1000 ppm
PCB (parts per million)	49 ppm
Chromium (parts per million)	10 ppm

Lead (parts per million)	100 ppm
Arsenic (parts per million)	5 ppm
Cadmium (parts per million)	2 ppm
Flash point (minimum)	100° F

(9 VAC 5-80-1180)

13. **Fuel Certification** - The permittee shall obtain a certification from the supplier with each shipment of No. 2 or No. 4 fuel oil. Each supplier certification shall include the following:

    a. The name of the fuel oil supplier;

    b. The date on which the fuel oil was received;

    c. The quantity of fuel oil delivered in the shipment;

    d. A statement that the fuel oil complies with the American Society for Testing and Materials (ASTM) specifications for No. 2 or No. 4 fuel oil, and

    e. The sulfur content of the fuel oil.

    Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications stipulated in Condition 12. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
    (9 VAC 5-80-1180)

14. **Fuel Certification** - The permittee shall obtain a certification from the supplier with each shipment of waste/recycled fuel oil. Each supplier certification shall include the following:

    a. The name of the waste/recycled fuel oil supplier;

    b. The date on which the waste/recycled fuel oil was received;

    c. The quantity of waste/recycled fuel oil delivered in the shipment;

    d. The content of arsenic, cadmium, chromium, lead, PCBs, and halogens with the recycled fuel oil in ppm, by weight, or percent (%), by weight;

    e. The sulfur content of the waste/recycled fuel oil;

    f. The flash point of the waste/recycled fuel oil;

    g. Documentation of the sampling of the waste/recycled fuel oil indicating the batch/tank # of the fuel when the sample was taken; and

    h. The methods used to determine the contaminant level in the waste/recycled fuel oil.

    Fuel sampling and analysis, independent of that used for certification, as may be periodically required or conducted by DEQ may be used to determine compliance with the fuel specifications

stipulated in Condition 11. Exceedance of these specifications may be considered credible evidence of the exceedance of emission limits.
(9 VAC 5-80-1180)

15. **Requirements by Reference** - Except where this permit is more restrictive than the applicable requirement, the NSPS equipment as described in Condition 1 shall be operated in compliance with the requirements of 40 CFR 60, Subpart I.
(9 VAC 5-80-1180, 9 VAC 5-50-400 and 9 VAC 5-50-410)

EMISSION LIMITATIONS

16. **Emission Limits -** Emissions from the operation of the aggregate dryer shall not exceed the limits specified below:

Particulate Matter	0.04	gr/dscf	3.4	tons/yr
PM-10	0.04	gr/dscf	2.3	tons/yr
Sulfur Dioxide	17.4	lbs/hr	5.8	tons/yr
Nitrogen Oxides (as NO_2)	16.5	lbs/hr	5.5	tons/yr
Carbon Monoxide	39.0	lbs/hr	13.0	tons/yr
Volatile Organic Compounds	9.6	lbs/hr	3.2	tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these annual emission limits shall be determined as stated in Conditions 2, 9, 10, 11, 12, 13, 14, 20, 23 and 24.
(9 VAC 5-80-1180, 9 VAC 5-50-260, and 9 VAC 5-50-410)

17. **Emission Limits -** Emissions from the operation of the liquid asphalt storage tank heater shall not exceed the limits specified below:

Sulfur Dioxide	0.08	lbs/hr	0.2	tons/yr
Nitrogen Oxides (as NO_2)	0.22	lbs/hr	0.6	tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these annual emission limits shall be determined as stated in Conditions 10, 11, 12, 13, and 21.
(9 VAC 5-80-1180)

18. **Emission Limits -** Emissions from the operation of the diesel electric generator shall not exceed the limits specified below:

Particulate Matter	0.47	lbs/hr	0.7	tons/yr
Sulfur Dioxide	0.27	lbs/hr	0.4	tons/yr
Nitrogen Oxides (as NO_2)	8.79	lbs/hr	12.9	tons/yr
Carbon Monoxide	3.72	lbs/hr	5.4	tons/yr

Volatile Organic Compounds	0.43 lbs/hr	0.6 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these annual emission limits shall be determined as stated in Conditions 3, 8, 11, 12, 13, and 21.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

19. **Emission Limits –** Fugitive emissions from loading and loadout activities, and stockpiles shall not exceed the limits specified below:

Particulate Matter	2.55 lbs/hr	0.9 tons/yr
PM-10	1.23 lbs/hr	0.4 tons/yr
Volatile Organic Compounds	2.04 lbs/hr	0.7 tons/yr

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits. Compliance with these annual emission limits shall be determined as stated in Conditions 7, 9, and 21.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

20. **Visible Emission Limit -** Visible emissions from the asphalt plant's affected facility, hot mix asphalt loadout, transfer station, asphalt storage silo, and fabric filter/baghouse exhaust stack shall not exceed 20% opacity or greater when product containing at least 10% recycled asphaltic material is being produced and shall not exceed 5% opacity at other times. Visible emissions shall be determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-50-260, 9 VAC 5-50-410, and 9 VAC 5-50-80)

21. **Visible Emission Limit -** Visible emissions from the diesel-powered electric generator, liquid asphalt storage tank heater, aggregate handling equipment, and fugitive emission sources shall not exceed 10% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.
(9 VAC 5-80-1180)

RECORDS

22. **On Site Records -** The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Director, Valley Region. These records shall include, but are not limited to:

    a. Annual hours of operation of the diesel-powered electric generator, calculated monthly as the sum of each consecutive 12-month period. Compliance for the consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

    b. Annual throughput of asphalt concrete, calculated monthly as the sum of each consecutive 12-month period. Compliance for each consecutive 12-month period shall be demonstrated

monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

c. Annual fuel throughput (in gallons) for the aggregate dryer (separately stating No. 2 fuel oil, No. 4 fuel oil, and waste/recycled oil throughput) and the liquid asphalt storage tank heater, each specified separately, and calculated monthly as the sum of each consecutive 12-month period. Compliance for each consecutive 12-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

d. All fuel supplier certifications.

e. Scheduled and unscheduled maintenance, and operator training.

e. The results of all stack tests and visible emission evaluations.

f. Operation and control device monitoring records as required in Conditions 3 and 4.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

INITIAL COMPLIANCE DETERMINATION

23. **Stack Test -** Initial performance tests shall be conducted for particulate matter emissions from the baghouse exhaust stack using EPA Method 5 to determine compliance with the emission limits contained in Condition 16. The tests shall be performed, and demonstrate compliance, within 180 days after the effective date of this permit. Tests shall be conducted and reported and data reduced as set forth in 9 VAC 5-50-30, and the test methods and procedures contained in each applicable section or subpart listed in 9 VAC 5-50-410. The details of the tests are to be arranged with the Director, Valley Region. The permittee shall submit a test protocol at least 30 days prior to testing. One copy of the test results shall be submitted to the Director, Valley Region, within 60 days after test completion and shall conform to the test report format enclosed with this permit. (9 VAC 5-50-30, 9 VAC 5-80-1200 and 9 VAC 5-50-410)

24. **Visible Emissions Evaluation -** Concurrently with the initial performance tests required by Condition 23, Visible Emission Evaluations (VEE) in accordance with 40 CFR Part 60, Appendix A, Method 9, shall also be conducted by the permittee on the baghouse exhaust stack. Each test shall consist of 30 sets of 24 consecutive observations (at 15-second intervals) to yield a six-minute average. The details of the tests are to be arranged with the Director, Valley Region. The permittee shall submit a test protocol at least 30 days prior to testing. The evaluation for each fuel shall be performed and demonstrate compliance within 60 days after achieving the maximum production rate at which the facility will be operated but in no event later than 180 days after the effective date of this permit. Should conditions prevent concurrent opacity observations, the Director, Valley Region, shall be notified in writing, within seven days, and visible emissions testing shall be rescheduled within 30 days. Rescheduled testing shall be conducted under the same conditions (as possible) as the initial performance tests. One copy of the test result shall be submitted to the Director, Valley Region, within 60 days after test completion and shall conform to the test report format enclosed with this permit. In addition, one copy of the test result shall be submitted to the EPA at the address listed in Condition 27.

(9 VAC 5-50-30, 9 VAC 5-80-1180 D and 9 VAC 5-50-410)

CONTINUING COMPLIANCE DETERMINATION

25. **Stack Tests** - Upon request by the DEQ, the permittee shall conduct additional performance tests for particulate matter from the asphalt plant fabric filter/baghouse to demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the Director, Valley Region.
(9 VAC 5-80-1120 and 9 VAC 5-50-30 G)

26. **Visible Emissions Evaluation** - Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations from the asphalt plant's affected facility, hot mix asphalt load-out, transfer station, liquid asphalt storage tank heater, aggregate handling equipment and fugitive emission sources to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the Director, Valley Region.
(9 VAC 5-80-1120 and 9 VAC 5-50-30 G)

NOTIFICATIONS

27. **Initial Notifications** - The permittee shall furnish written notification to the Director, Valley Region of:

    a. The date of the first use of the asphalt plant after receipt of this permit, within 15 days after such date.

    b. The anticipated date of each visible emissions evaluation, postmarked at least 30 days prior to such date.

    c. The anticipated date of each stack test, postmarked at least 30 days prior to such date.

    Copies of the written notification referenced in this Condition are to be sent to:

    Associate Director
    Office of Air Enforcement (3AP10)
    U.S. Environmental Protection Agency
    Region III
    1650 Arch Street
    Philadelphia, PA 19103-2029

    (9 VAC 5-50-50 and 9 VAC 5-80-1180)

GENERAL CONDITIONS

28. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

    a. Knowingly makes material misstatements in the permit application or any amendments to it;

    b. Fails to comply with the conditions of this permit;

c. Fails to comply with any emission standards applicable to a permitted emissions unit;

d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or

e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

29. **Right of Entry -** The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

30. **Maintenance/Operating Procedures –** At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to the portable asphalt concrete plant:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

b. Maintain an inventory of spare parts.

c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

31. **Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken, and name of person generating the record.
(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

32. **Notification for Facility or Control Equipment Malfunction -** The permittee shall furnish notification to the Director, Valley Region of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Director, Valley Region.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

33. **Violation of Ambient Air Quality Standard -** The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

34. **Change of Ownership -** In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Director, Valley Region of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

35. **Permit Copy -** The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

PORTABLE PERMIT CONDITIONS

36. **Relocation of Portable Facilities -** The permittee is authorized to apply for relocation of the portable asphalt concrete plant to other project sites within Virginia under the provisions of 9 VAC 5-80-1320. Such requests will be evaluated on a case-by-case basis.
(9 VAC 5-80-1180 and 9 VAC 5-80-1320)

37. **Notification for Relocation of Portable Facilities -** At least fifteen days prior to each relocation, the following information shall be submitted to the reviewing DEQ-Regional Office (the Region to which the facility shall be relocated):

    a. the facility registration number.

b. the date of the permit.

c. date of estimated relocation and start-up of the facility.

d. the period of time the facility will be at the proposed site.

e. the location and description of the proposed site, including a map showing the exact location.

f. the location of the present site. If the present site is outside the Commonwealth of Virginia, include the latest location in Virginia.

g. a description of the facility to be relocated. This should include any identification or equipment number that the owner uses to identify the facility.

h. a description of the action at the proposed site. This includes the type of product and the total throughput at the proposed site.

i. the process throughput which has occurred at the present site, if this site is located inside the Commonwealth of Virginia.

j. the process throughput for the previous 12 consecutive months.

(9 VAC 5-80-1180)

38. **Operation of Portable Facilities** - The portable asphalt concrete plant may not operate at any single temporary site for a period in excess of 18 months without written approval from the DEQ. (9 VAC 5-80-1180)

STATE-ONLY ENFORCEABLE REQUIREMENTS

This section is included pursuant to 9 VAC 5-80-1120 F and is not required under the federal Clean Air Act or under any of its applicable federal requirements. The following conditions are only enforceable by the Commonwealth of Virginia State Air Pollution Control Board and its designees.

39. **Odor Controls -** The permittee shall not cause or permit any odorous emissions to be discharged into the atmosphere from the permittee's property which causes an odor objectionable to individuals of ordinary sensibility.
(9 VAC 5-80-1180 D and 9 VAC 5-50-140)

40. **Odor Controls –** The permittee shall add an odor suppression or masking agent to the liquid asphalt storage tank each time that a new shipment of liquid asphalt is received, or the permittee shall implement an alternative, DEQ-approved odor control strategy. Any alternative odor control strategy shall be approved in writing by DEQ at least 15 days prior to its implementation by the permittee.
(9 VAC 5-50-140 and 9 VAC 5-80-1180)

41. **Odor Complaints -** The permittee shall keep a log of odor complaints received and action(s) taken. This log shall be available for inspection. The Director, Valley Regional Office, shall be notified by the close of business on the next full business day following the receipt of any complaint. In addition, the owner shall provide within 14 days, copies of each individual odor response form explaining the results of the odor investigation and corrective actions taken.
(9 VAC 5-80-1180 D and 9 VAC 5-50-140)

42. **Odor Control Records –** The permittee shall maintain records of odor control parameters as necessary to demonstrate compliance with this State Only Enforceable section of the permit. The content and format of such records shall be arranged with the Director, Valley Regional Office. These records shall include but are not limited to the following:

    a. Odor suppression or masking agent usage, including identification of the agent used, the volume of agent used, and the date used, or equivalent records for an alternative odor control strategy approved by DEQ in accordance with Condition 40; and

    b. Log of odor complaints.

    These records shall be available for inspection by the DEQ and shall be current for the most recent five years.
    (9 VAC 5-50-140 and 9 VAC 5-80-1180)

NORTHERN VIRGINIA OPACITY REVISION COMMENTS AND RECOMMENDATION:

Summary

Comments were received from MWAQC and the City of Alexandria in support of revising the opacity standards from 20% to at least 10%. Comments were received from the Department of the Navy, GPSF Securities Inc, VMA, Dominion, VIPP, Georgia-Pacific, and Mirant in opposition to revising the opacity standards.

Supportive comments generally point to the potential for reductions in emissions; the deleterious nature of fine particulate matter; MD's and DC's more stringent opacity standards; and the need to ensure continued compliance with the $PM_{2.5}$ NAAQS. Opposing comments generally note that $PM_{2.5}$ air quality in the Commonwealth meets the NAAQS for $PM_{2.5}$ and that $PM_{2.5}$ air quality trends show continued improvement in measured concentrations. Several commenters pointed out the expense involved in retrofit, replacement, or upgrades needed to meet a revised standard of 10%.

The Air Division recommends that the petition for regulatory revision not be granted at this time. Reducing the opacity requirements from 20% to 10% would provide emissions benefits and most likely reduce emissions of $PM_{2.5}$ as well as other pollutants such as VOC from at least some emissions units. However, the fact that the Commonwealth already complies with the $PM_{2.5}$ NAAQS, mitigates, to a certain extent, the need for such emission reductions. Also, VDEQ-Air Division has significant budget restraints, and the regulatory process for the petitioned regulatory revision would be quite lengthy and time consuming. At present, using scarce Air Division resources on such a project would not be prudent, considering the challenges imposed by the new ozone NAAQS as well as other CAA mandates. Should more resources be made available to the Air Division in the future, further consideration of this matter may, at that time, be warranted.

Specific Comments

The following paragraphs provide an overview of each commenter's concerns and issues.

- MWAQC

  (1) MWAQC supports reducing the opacity standards from 20% to 10%.
  (2) MWAQC develops regional control strategies for the metropolitan Washington, D.C. area. MWAQC takes a regional approach to improving air quality, which in this case means adopting consistent opacity standards between the three states.
  (3) Opacity is closely linked to particulate emissions, and MWAQC is concerned that 20% is not protective enough of human health.
  (4) Opacity readings provide a good method for evaluating the effectiveness of emission controls. For evaluating operations where no stack is in place, opacity readings are likely the only method available for evaluating control effectiveness as well as compliance with emission rates. Tightening the opacity standard will reduce emissions, and reducing emissions will help ensure that the region's fine particulate levels stay below the standard.

- City of Alexandria

  (1) Alexandria strongly supports a reduction in the opacity standards.
  (2) Opacity is an indicator of PM emissions, especially fine PM emissions from stationary sources. A reduction in the opacity standards to 10% will contribute to reducing PM emissions.
  (3) VDEQ's current opacity standard was derived from regulations in effect in 1985 and is archaic. In the last two decades, the particulate matter NAAQS has been revised three times. Reducing the opacity standard will contribute towards mitigating the adverse health effects of PM emissions and promote attainment and maintenance of the NAAQS.
  (4) MD and DC both have significantly more stringent opacity requirements.

(5) Data from EPRI and EPA show opacity positively correlates with PM emissions, especially fine particulate matter. A reduction in opacity standards will reduce $PM_{2.5}$ emissions. Data was provided by the commenter.

- Department of the Navy

(1) The SAPCB should postpone consideration of a rulemaking until after the final 2006 24-hour $PM_{2.5}$ NAAQS designations are published (December, 2008). The results of the designations should be strongly considered in the decision to go forward with a rulemaking.
(2) A rule making lowering the opacity standard should only apply to new and modified sources and only to those air pollutant emission sources resulting in the most effective fine particulate matter reductions.
(3) A cost benefit analysis has not been presented. The DOD would have to reprogram millions of dollars toward retrofitting or replacing existing equipment. which seems excessive since VA projects attainment for the $PM_{2.5}$ NAAQS.

- GPSF Securities Inc/GESF Birchwood-GP LLC

(1) The attainment plan for $PM_{2.5}$ and the ambient monitoring data demonstrate that more stringent opacity limits are not required to attain the NAAQS.
(2) If the opacity regulations are revised for purposes of consistency, the revised rules should contain all the exemptions provided by the rules being matched. Examples provided note that MD allows differing opacity limitations based on an area's designation. MD also allows a 40% occurrence for 6 minutes during each hour for soot blowing, start up, and cleaning of control equipment, among other listed activities.

- Virginia Manufacturer Association

(1) The rule making petition fails to meet the requirements of 9 VAC 5-170-90.C in that it does not state the need and justification for the proposed action, it does not state the impact on the petitioner and other affected people, and it does not contain supporting documents, as applicable.
(2) Lowering Virginia's opacity standards would force many of VMA's member companies (and many other companies as well) to needlessly retrofit their facilities with new PM emission controls at exorbitant costs. Many of those companies, particularly in today's economic turmoil, would likely choose to shut down rather than expend the large sums of money required to pay for such a retrofit.
(3) It is inappropriate and unnecessary to draw all of Virginia sources into the often rancorous relations between Mirant and the local jurisdictions through MWAQC's opacity petition.
(4) Virginians are protected against PM health risks by virtue of the Commonwealth's compliance with the $PM_{2.5}$ NAAQS.
(5) There is no direct relationship between opacity and human health. PM is the pollutant of concern for human health and on an area-wide basis, there is no direct quantitative relationship between opacity and PM emissions.
(6) Opacity standards vary considerably from state to state. Virginia's standard of 20% is not out of line with other states. In recent rule makings, EPA has affirmed that 20% is a reasonable opacity level, for example see the opacity limitation for MACT requirements on new lime kilns.
(7) EPA advocates, in the $PM_{2.5}$ Implementation Rule, the revising of opacity standards to enhance opacity monitoring requirements, not to lower the allowable percent opacity.
(8) MWAQC's petition fails to justify the assertion that changing Virginia's opacity standards would improve air quality.

- Dominion

(1) The commenter does not believe there is need or justification for lowering Virginia's opacity standard.
(2) Air quality in the region is improving, showing a steady decline in annual and 24-hour $PM_{2.5}$ concentrations. Data show statewide compliance with the $PM_{2.5}$ NAAQS, which is set at levels to

protect human health. Therefore, air quality in Virginia is at levels considered by EPA to be protective of human health and does not justify the need for modifying the opacity standard.

(3) MWAQC provided no evidence linking Virginia opacity standards to $PM_{2.5}$ air quality and health impacts or to support its contention that opacity standards in Virginia are set too high to be sufficiently protective of human health.

(4) A correlation between opacity levels and the amount of particulate matter emitted from a stack does not necessarily exist. Changes in opacity are generally used as an indicator of whether particulate matter emission controls are functioning properly. Much of EPA's focus in the Implementation Rule is on revising and improving opacity monitoring methods. EPA's guidance advocates an approach to address particulate emissions more directly through enhanced monitoring techniques rather than the revision of allowable opacity levels.

(5) A reduction from 20% to 10% would be particularly difficult to meet for EGU's operating intermittently and infrequently. A reduction in the opacity standard could require expensive pollution control retrofits or the use of alternative fuels. The commenter estimates potential expenditures in the tens of millions of dollars at the Possum Point facility alone. Since air quality levels are already meeting the NAAQS, such expenditures are difficult to justify without a more technically robust demonstration that such measures would provide actual air quality benefits.

(6) MWAQC fails to meet the provisions of 9 VAC 5-170-90 C. in the petition.

- Virginia Independent Power Producers, Inc.

(1) Opacity standards should not apply to fugitive dust emissions; start up, shut down, and malfunction emissions; and emergency and other typically inactive equipment.

(2) Opacity limitations should also be considered for mobile sources, which contribute significant amounts of air pollution in the NoVA region. Specifically, mobile source opacity restrictions should be considered for gasoline and diesel engines powering ground based and air borne vehicles.

(3) VIPP reiterated the comments made by Birchwood.

- Georgia-Pacific LLC

(1) GP supports the comments submitted by the VMA.

(2) GP owns and operates eight manufacturing facilities in Virginia. All are subject to the existing 20% opacity standard to some degree and would be adversely affected by the proposed reduction in that standard. The requested regulatory change is unnecessary and unjustified, as explained in the VMA comments.

- Mirant Mid-Atlantic, LLC

(1) Mirant objects to MWAQC's petition to change VA's opacity standard to 10%. MWAQC's petition is not factually accurate and will not result in improved air quality.

(2) MD's regulations have a lower opacity limit (10%) for nonattainment areas but allow significantly more deviations up to 40% for 6 minutes in any hour than do VA's regulations. MD's enforcement policy also provides leniency for opacity exceedances of up to5% of the operating hours in any given quarter without enforcement action. DC's regulations also provide for exemptions. Therefore, MWAQC's characterization of MD and DC standards being "much stricter" than Virginia's standard is not accurate.

(3) EPA has pointed out that secondary particles formed from SO_2, NO_X, VOC's, and NH_3 are the main components of $PM_{2.5}$, not direct $PM_{2.5}$ emissions. Direct $PM_{2.5}$ emissions make up only a small fraction of monitored $PM_{2.5}$ concentrations. Accordingly, restrictions on opacity miss the mark.

(4) PRGS became subject to a state operating permit that includes low PM, PM_{10}, and $PM_{2.5}$ limits. Projects to implement PM reductions for the facility have not been selected. Concurrent impacts of these projects on opacity emissions cannot be determined. Mirant should be exempt from, or have deferred compliance requirements for, any change to the opacity standard. Facilities equipped with installed PM CEMS used for determining compliance with PM standards should be exempt from opacity requirements since the PM CEMS are a better monitor of PM than is the opacity surrogate.

(5) Air quality is improving and meets the $PM_{2.5}$ NAAQS across Virginia. Mirant knows of no studies linking opacity to adverse impacts on human health. There is no need for a more stringent opacity standard in Virginia.
(6) If Virginia chooses to modify the opacity standard, the modified regulation should include exemptions for transient operations such as soot blowing, load ramping, shutdowns, and control equipment cleaning as well as an exemption for units with PM CEMS. Additionally, opacity regulation changes should be phased in.

Air Division Considerations

Air quality data from $PM_{2.5}$ monitors across the Commonwealth show an improvement in $PM_{2.5}$ air quality over a number of years. Table 1 and Table 2 show design values for monitors across the Commonwealth from 2000 through 2007, the latest available data. Monitors generally show decreasing design values, representing better air quality. All monitors show compliance with the 15.0 ug/m^3 annual standard and the 35 ug/m^3 24 hour standard.

Table 1: Annual $PM_{2.5}$ Design Values (ug/m^3)

Site Name	Site ID #	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007
Arlington	510130020	14.8	14.6	14.5	14.6	14.2	14.1
Charles City	510360002	13.3	12.8	12.3	12.5	12.4	12.3
Chesterfield	510410003	14.2	13.6	13.4	13.6	13.4	13.3
Fairfax Lee Park	510590030	13.9	13.6	13.4	13.6	13.4	13.0
Fairfax Annandale	510591005	13.7	13.4	13.5	13.8	13.6	13.5
Fairfax McLean	510595001	14.5	14.0	13.9	14.1	13.9	13.7
Henrico Math & Science	510870014	13.9	13.7	13.7	13.8	13.6	13.2
Henrico West End	510870015	13.5	12.9	12.8	13.0	12.9	12.9
Loudoun	511071005	13.8	13.6	13.5	13.9	13.6	13.2
Page	511390004	13.4	12.9	12.6	12.8	12.7	12.9
Bristol	515200006	15.3	14.3	13.9	14.0	13.9	13.9
Hampton	516500004	12.9	12.5	12.1	12.4	12.3	11.9
Norfolk	517100024	13.3	13.0	12.7	13.0	12.9	12.4
Roanoke City	517700014	15.1	14.2	13.8	14.1	14.3	14.5
VA Beach	518100008	12.7	12.6	12.5	12.6	12.5	12.1

NAAQS=15.0 ug/m^3
2003-2005, 2004-2006, and 2005-2007 data was derived from Air Monitoring - Carolyn Stevens
1999-2002, 2000-2003, 2001-2004, 2002-2004 data was taken from EPA's PM2.5 spreadsheet

Table 2: 24 Hour $PM_{2.5}$ Design Values (ug/m^3)

Site Name	Site ID #	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006	2005-2007
Arlington	510130020	37	37	37	36	33	32
Charles City	510360002	32	33	31	32	31	32
Chesterfield	510410003	33	34	33	33	30	31
Fairfax Lee Park	510590030	35	34	35	35	35	34
Fairfax Annandale	510591005	35	36	35	35	34	32
Fairfax McLean	510595001	36	35	33	34	34	33
Henrico Math & Science	510870014	32	33	32	33	31	32
Henrico West End	510870015	31	31	30	30	29	29
Loudoun	511071005	35	34	34	36	35	34

Page	511390004	32	33	32	31	29	30
Bristol	515200006	36	33	31	30	31	30
Hampton	516500004	30	30	28	29	29	29
Norfolk	517100024	30	30	29	30	30	29
Roanoke City	517700014	34	33	33	33	33	32
VA Beach	518100008	28	30	29	30	30	30

NAAQS Standard = 35 ug/m^3
2003-2005, 2004-2006, and 2005-2007 data was derived from Air Monitoring - Carolyn Stevens
1999-2002, 2000-2003, 2001-2004, 2002-2004 data was taken from EPA's PM2.5 spreadsheet

Tables 3 and 4 show speciation data from the McMillan monitoring site in DC. This monitoring site contains a speciation monitor that provides data on the various species making up the $PM_{2.5}$ being measured by the federal reference monitor (FRM) located at the site.. The speciation monitor is not an FRM and uses a different testing methodology. This speciation data show that reductions in the organic carbon fraction have been helping to drive down the $PM_{2.5}$ concentrations. The area has implemented many VOC controls. However, significant portions of the measured $PM_{2.5}$ concentrations are in the sulfate component. Slight overall reductions from 2001 through 2007 have been realized in this category, most likely due to the greatly reduced sulfur concentrations in both gasoline and on-road diesel fuels. However, as transport of SO_2 from EGU's is reduced in the coming years, the sulfate component of $PM_{2.5}$ is predicted to show much larger reductions. Therefore, the SO_2 controls instituted in up wind areas and also within the metropolitan Washington, D.C. area should provide even greater improvements in air quality.

Table 3: Annual $PM_{2.5}$ Speciation Data for 110010043 McMillan Site

Year	$PM_{2.5}$	Ammonium Ion	Organic Carbon	Nitrate	Elemental Carbon	Sulfate	Others
	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
2001	16.88	1.81	5.01	1.49	0.74	5.29	2.55
2002	15.93	1.99	4.79	1.57	0.68	5.38	1.52
2003	14.93	1.92	4.12	1.73	0.72	4.90	1.54
2004	15.11	1.96	3.81	1.84	0.61	5.17	1.73
2005	16.30	2.15	4.34	1.98	0.72	5.35	1.76
2006	14.27	1.65	4.07	1.45	0.66	4.34	2.10
2007	14.62	1.88	3.75	1.55	0.65	4.71	2.07

Table 4: Summertime Speciation Data for 110010043 McMillan Site (May 1 through September 30)

Year	PM2.5	Ammonium Ion	Organic Carbon	Nitrate	Elemental Carbon	Sulfate	Others
	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3	ug/m^3
2001	18.83	2.11	5.03	0.92	0.66	6.77	3.33
2002	19.04	2.29	5.50	0.86	0.57	7.24	2.58
2003	18.28	2.23	4.65	1.13	0.69	6.89	2.70
2004	16.27	1.99	4.19	1.34	0.64	5.95	2.17
2005	18.47	2.36	4.54	0.90	0.61	7.48	2.58
2006	17.43	1.83	4.65	0.65	0.58	6.08	3.64
2007	17.63	2.04	4.56	0.72	0.53	6.46	3.32

Data in Tables 3 and 4 taken from AQS.

Tables 5 and 6 contain data from modeling runs predicting future concentrations of $PM_{2.5}$. The data labeled "BOTW+CAIR – 2009" reflects the results of modeling performed to support the attainment plan for the metropolitan Washington, D.C. area. These results do not consider SO_2 emission reductions from EGU's since CAIR requirements do not become effective until 2010. However, the results labeled "ASIP-2018" do reflect the additional SO_2 reductions expected from the CAIR program. The future year modeling results support the conclusion that air quality will continue to improve.

Table 5: Predicted Future 24 Hour $PM_{2.5}$ Design Values

Site Name	Site ID	24 Hour PM2.5 Projected DV, ug/m3	
		BOTW+CAIR - 2009	ASIP -2018
Arlington	510130020	29.7	29.5
Charles City	510360002	24.7	23.1
Chesterfield	510410003	25.8	24.9
Fairfax-Lee Park	510590030	27.1	26.9
Fairfax-Annandale	510591005	25.8	26.3
Fairfax-McLean	510595001	25.4	26.1
Henrico-Math & Science	510870014	24.6	24.1
Henrico-PRO	510870015	22.0	22.0
Loudoun	511071005	24.9	25.1
Page	511390004	24.5	24.0
Bristol	515200006	27.6	24.5
Hampton	516500004	24.3	23.6
Norfolk	517100024	23.4	23.5
Roanoke	517700014	25.5	24.2
Virginia Beach	518100008	24.1	24.2

Table 6: Predicted Future Annual $PM_{2.5}$ Design Values

Site Name	Site ID	Annual PM2.5 Projected DV, ug/m3	
		BOTW+CAIR-2009	ASIP-2018
Arlington	510130020	11.5	11.2
Charles City	510360002	10.2	9.7
Chesterfield	510410003	10.8	10.5
Fairfax-Lee Park	510590030	10.4	10.1
Fairfax-Annandale	510591005	10.5	10.5
Fairfax-McLean	510595001	10.7	10.8
Henrico-Math & Science	510870014	10.7	10.6
Henrico-PRO	510870015	9.8	9.9
Loudoun	511071005	10.1	10.1
Page	511390004	10.1	9.5
Bristol	515200006	12.0	10.8
Hampton	516500004	10.1	9.6
Norfolk	517100024	10.6	10.2
Roanoke	517700014	11.3	10.5

Table 6: Predicted Future Annual $PM_{2.5}$ Design Values			
Site Name	Site ID	Annual PM2.5 Projected DV, ug/m3	
		BOTW+CAIR-2009	ASIP-2018
Virginia Beach	518100008	10.2	9.9

The data in the tables above indicate that $PM_{2.5}$ air quality in Virginia currently meets the $PM_{2.5}$ NAAQS and that $PM_{2.5}$ air quality should continue to improve without a tightening of the opacity requirements.

A review of several Mid-Atlantic states' regulations show that opacity requirements are quite varied. New Jersey's regulations, for instance allow 20% opacity or no visible emissions, depending on boiler size. West Virginia limits most fuel burning operations to no more than 10% opacity, but West Virginia regulations allow exemptions to this standard at the Director's discretion. North Carolina allows 30% opacity for existing units, and a 20% opacity limitation for new units, with exceptions allowed. Table 7 give an overview of Mid-Atlantic states' requirements.

Table 7: Synopsis of Mid-Atlantic States' Opacity Requirements				
State	**Citation**	**Applicability**	**Requirement**	**Website**
DC-DDOE	Chapter 6 Section 600.1	Fuel burning equipment placed into initial operation on or after 01/01/77	No visible emissions except 2 minutes in any 60 minute period not exceeding 40% opacity and an aggregate of 12 minutes in a 24 hour period during start up, cleaning, soot blowing, adjustment of controls, or malfunction.	http://www.ddoe.dc.gov/ddoe/frames.asp?doc=/ddoe/lib/ddoe/information2/air.reg.leg/aqd.revch6.pdf
	Chapter 6 Section 600.2	Fuel burning equipment placed into initial operation before 01/01/77	10% except for 2 minutes in any hour not to exceed 40% and an aggregate of 12 minutes in any 24 hour period other than during start up During startup, not to exceed 40% over 6 minutes for 5 times per startup During shutdown, not to exceed 15% and not to exceed 30% over 3 minutes for 3 times per shutdown.	
WVA-DEP	Title 45 Series 7 (45-7-3.1 and 3.2)	Any process source operation except coke production, blast furnaces, or storage structures	No more than 20% opacity except for no more than 1 episode of 40% opacity for 5 minutes in any 60 minute period.	http://www.wvsos.com/csr/verify.asp?TitleSeries=45-07
	Title 45 Series 7 (45-7-2-3.1, 3.3, 3.4)	Fuel burning equipment	Not greater than 10% opacity based on a 6-minute block average. For soot blowing or cleaning, the Director may approve an alternative limitation, not greater than six 6-minute periods in a day exceeding 30%. The Director may approve an alternative limit from the 10% limitation, not to exceed 20%, based on a series of listed criteria.	http://www.wvsos.com/csr/verify.asp?TitleSeries=45-02
MD-MDE	COMAR 26.11.06.02 C	All sources with the exception of fireplaces, open fires, coke ovens, grain handling, oxygen lances, hot dip galvanizing, food prep, explosives and propellants. construction, and unconfined sources	No visible emissions for Anne Arundel, Baltimore, Carroll, Harford, Howard, Montgomery, and Prince George. 20% opacity for all other counties.	http://www.dsd.state.md.us/comar/26/26.11.06.02.htm (opacity requirements) http://www.dsd.state.md.us/comar/26/26.11.01.03.htm (area delineation)
NJ-DEP	Title 7 Chapter 27 Subchapter 3 7:27-3.2	Stationary indirect heat exchangers	No visible emissions for stationary indirect heat exchangers with a rated hourly capacity of less than 200 mmbtu/hr. 20% opacity for stationary indirect heat exchangers with a rated hourly capacity at least 200 mmbtu/hr. Both standards have an exception for visible smoke for no more than 3 minutes in any consecutive 30 minute period.	http://www.nj.gov/dep/aqm/rules.html#27 (see subchapter 3)
NC-NCDENR	15A NCAC 02D.0521	Fuel burning equipment and other process except for asphalt plants, pulp mills, NSPS facilities, BART facilities, NESHAP facilities, MWC's, MWI's, solid waste incinerators, and OSWI's	For source manufactured as of July 1, 1971, opacity shall not be more than 30% averaged over a 6 minute period. 40% opacity may be exceeded if no 6 minute period exceeds 90%, and more than one 6 minute period exceeds 40% in any one hour, and no more than four 6-minute periods exceed 40% in any 24 hour period. For sources manufactured after July 1, 1971, opacity shall not exceed 20% averaged over a 6-minute period. 20% may be exceeded if no 6 minute period exceeds 87%, no more than one 6 minute period exceeds 20% in any hour, and no more than four 6 minute periods exceed 20% in any 24 hour period.	http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environment%20and%20natural%20resources/chapter%2002%20-%20environmental%20management/subchapter%20d/15a%20ncac%2002d%20.0521.html

Table 7: Synopsis of Mid-Atlantic States' Opacity Requirements				
State	**Citation**	**Applicability**	**Requirement**	**Website**
PA-DEP	Chapter 123.41	Any process except agricultural activities; construction or demolition; grading, paving, or other road maintenance; use of roads; land clearing; material stockpiling, open burning; blasting in pit mines; coke ovens;	Less than 20% for periods aggregating more than 3 minutes in any 1 hour. No more than 60% at any time.	http://www.pacode.com/secure/data/025/chapter123/chap123toc.html (See the Visible Emissions section)
VA-DEQ	9 VAC 5 Chapter 40 Article 8 (9 VAC 5-40-940)	Fuel burning equipment existing source requirement	No more than 20% opacity, except for 1 six-minute period in any one hour of not more than 60% opacity.	http://www.deq.virginia.gov/air/regulations/air40.html (See fuel burning equipment section)
	9 VAC 5 Chapter 40 Article 1 (9 VAC 5-40-80)	General requirements for existing sources	Visible emissions must be less than or equal to 20% opacity, except for one six-minute period in any one hour of not more than 60% opacity.	http://www.deq.virginia.gov/air/regulations/air40.html (See Article 1)
	9 VAC 5 Chapter 50 Article 1 (9 VAC 5-50-80)	Anything not subject to the existing source regulations, NESHAPS, or NSPS.	No more than 20% opacity, except for one six-minute period in any one hour of not more than 30% opacity.	http://www.deq.virginia.gov/air/regulations/air50.html (See Part II, Article 1)

As several commenters mention, the potential exists that air pollution control equipment would either need to be installed or upgraded so that units could meet a tighter opacity standard. Such control installation and/or upgrade would reduce emissions, potentially for $PM_{2.5}$ and for other types of pollutants such as VOC. However, opacity as a surrogate measurement of emissions and an indicator of control equipment operations presents challenges in quantifying such emission reductions. Emission reductions would be highly specific to each unit operations, making blanket assumptions against inventory data on SCC level data or SIC level data highly inaccurate. Known data and commenters' assertions that equipment retrofit and upgrade would be required for compliance with a lower opacity standard support the qualitative assertion that emission reductions would result from a lower opacity standard. Quantifying these emissions reductions, however, would be highly resource intensive and may not provide reliable estimates. Calculating cost effectiveness of a regulatory revision to change opacity limitations from 20% to 10% would be equally challenging without good estimates of potential emission reductions.

Another consideration is current resource constraints. Such a regulatory revision would be processed via the "long" regulatory process, necessitating the formation of an ad hoc committee to draft the regulation and multiple reviews of the draft regulation by Department of Planning and Budget, the Governor's office, and other state agencies. Such a process is expected to be quite contentious and 36 months may be a conservative estimate for the time needed to implement such a rule. Undoubtedly a significant amount of a regulatory analyst's time would be needed during the 36 months period. In December, 2008, the Air Division will have three analysts, for which a prodigious amount of mandated work exists, including, but not limited to, a revision of the minor new source review regulation, biofuel general permit development, CTG development and promulgation, and I&M regulatory updates. Additionally, these staff will also have to process any changes that result from the CAIR and CAMR vacaturs.

Agency Recommendation

Based on the information and analysis provided in this memo, **the Air Division recommends that the petition for regulatory revision not be granted at this time.** In summary, the reasons for this recommendation are as follows:

- Fine particulate matter air quality has improved in VA as a result of other, highly effective control programs to the point where all monitors are currently in compliance with both the annual and daily standards. This improvement is expected to continue in the future. Therefore, a definitive air quality need justifying a more stringent opacity standard does not exist at this time.
- It would be quite difficult and time consuming to quantify the air quality benefit and cost effectiveness of tightening the opacity standard.
- The regulatory process for such an action would likely be a long and contentious process.
- Limited agency resources could be better utilized in advancing other, more beneficial air quality improvement programs.

If and when new information on the benefits of this action and more resources become available, this decision could be revisited in the future.