

US EPA ARCHIVE DOCUMENT

**THE EARLY ACTION COMPACT FOR
WASHINGTON COUNTY, MARYLAND**

Submitted by:

**Washington County and the
Maryland Department of the Environment
Air and Radiation Management Administration**

December 31, 2002

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THE EARLY ACTION COMPACT

Introduction

On November 13, 2002, the United States Environmental Protection Agency (EPA) settled a lawsuit with several environmental groups. This settlement agreement touched upon many issues linked to the designation of new areas under the 8-hour ozone standard, including Early Action Compacts. The submittal date for early action compacts (December 31, 2002) was formally announced to the states in an EPA memorandum dated November 14, 2002. The December 31, 2002 date originated as part of a protocol developed by Texas that was endorsed by EPA Region 6 on June 19, 2002.

As provided for in the November 14, 2002 EPA guidance on Early Action Compacts, Washington County and the Maryland Department of the Environment reserve the right to terminate this agreement at any time for any reason.

Existing Air Pollution Controls in Washington County

The pollution controls being implemented in Washington County, Maryland are already much more stringent than the existing pollution controls in neighboring states considering Early Action Compacts.

Because Maryland is part of the Ozone Transport Region, Washington County is already subject to New Source Review, the Enhanced Vehicle Emissions Inspection Program, VOC and NOx RACT and many other control programs. Appendix A provides a detailed list of other control measures already being implemented in Washington County.

Ozone Transport Into Washington County

High ozone levels in Washington County are significantly affected by ozone pollution floating in from distant upwind areas, like the Ohio River Valley, and closer neighboring areas like the Washington and Baltimore metropolitan areas.

The Maryland Department of the Environment (MDE) has conducted significant research to estimate the role of ozone transport into Maryland. On most high ozone days in Washington County, the MDE research indicates that over 90% of the problem originates from sources outside of the County. Despite the overwhelming role of ozone transport in Washington County, the early reductions being achieved under this compact will clearly help bring cleaner air to the area more quickly. Appendix B provides a list of the relevant research and modeling studies that support this conclusion.

Because Maryland's high ozone levels are so significantly affected by ozone transport, Maryland was the first state in EPA Region III to submit its transport regulations (called the NOx SIP Call) and has filed a petition under Section 126 of the Clean Air Act to compel reductions in upwind states.

The National Ozone Standard

The Federal Clean Air Act is the comprehensive law that regulates airborne emissions from area, mobile, and stationary sources nationwide. This law authorizes the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment. The EPA currently has two NAAQS for ozone, the 1-hour peak standard and the 8-hour standard.

Areas formally declared in violation of the NAAQS and adjacent contributing areas are designated “nonattainment areas.” Nonattainment areas must meet certain Clean Air Act requirements, such as:

Transportation Conformity - Requires a demonstration that regional long-range transportation plans will not negatively impact air quality, or federal transportation funds can be withheld.

New Source Review - Requires a review of new or expanded industrial operations to minimize air pollution.

Rate of Progress Requirements - A certain percentage of pollutants must be reduced each year.

Specific attainment date - Consequences of failure to reach attainment by the specified date include stricter control measures and the potential for stiff penalties.

10-year maintenance plan - Includes additional or continuing mandatory programs for 10 years following attainment.

Another requirement obligates the state to develop and implement a prescriptive comprehensive clean air plan that mandates how the area will come into compliance with the standard. This plan and any revisions to it are known as the State Implementation Plan (SIP).

The 1-Hour Standard in Washington County

An area must have a monitored hourly peak ozone concentration below 125 parts per billion (ppb) to meet the 1-hour ozone standard. If an area exceeds the standard more than three times in three years, it is subject to a nonattainment designation. The Hagerstown monitor located in Washington County has not exceeded the 1-hour standard since 1999. Washington County remains in compliance for the 1-Hour Standard. Washington County has one ozone monitor located in Hagerstown.

The 8-Hour Standard in Washington County

During the past several years, air quality planning in the state of Maryland has intensified as ozone concentrations have exceeded the value permitted by the 8-hour ozone NAAQS. Due to legal challenges to the new NAAQS and ensuing litigation, EPA has not formally designated any areas of the United States in violation of the 8-hour ozone NAAQS. The 8-hour NAAQS has been upheld by the Supreme Court and EPA anticipates nationwide designation of nonattainment

areas in 2004.. Based on recent monitoring data, it is probable that Washington County will be designated a nonattainment area when formal designations occur.

The 8-hour ozone standard is found by averaging three years of the fourth highest maximum 8-hour ozone levels values in an area. This number, called the design value, must be lower than 85 parts per billion (ppb) to meet the standard. Currently, the Washington County design value (averaging 2000, 2001, and 2002) is 87 ppb. Each year this design value will change slightly. Results are available for the Hagerstown ozone monitor for the 8-hour ozone standard beginning in 2000. Ozone concentrations have exceeded the values permitted by the 8-hour ozone standard.

Table 1. Exceedences were as follow:

1)	Number of one hour ozone exceedences:	None
2)	Number of 8 hour ozone exceedences:	27
	Year	#
	Max. Value	
	1999	11
	2000	2
	2001	6
	2002	8
	8-hour design value: 3 year average of 4th highest maximum value:	
	2001	85
	2002	87
	1-hour design value: 4th highest value over a three-year period.	
	2001	104
	2002	105

OZONE EARLY ACTION PROGRAM (OEAP)

The region is volunteering to put itself into the OEAP process to expedite air cleanup for future public health and welfare.

Protocol for OEAP

The OEAP was developed according to protocol endorsed by EPA Region 6 on June 19, 2002 (as supplemented in a letter dated October 18, 2002, from Gregg Cooke, EPA, to Robert Huston, Texas Commission on Environmental Quality). The Protocol offers a more expeditious time line for achieving clean air than expected under EPA’s 8-hour implementation rulemaking.

The principles of the OEAP to be executed by Local, State and EPA officials are:

- Early planning, implementation, and emission reductions leading to expeditious attainment and maintenance of the 8-hour ozone standard;
- Local control of the measures to be employed, with broad-based public input;

- State support to ensure technical integrity of the OEAP;
- Formal incorporation of the OEAP into the SIP;
- Deferral of the effective date of nonattainment designation and related requirements so long as all OEAP terms and milestones are met; and
- Safeguards to return areas to traditional SIP requirements should OEAP terms and/or milestones be unfulfilled, with appropriate credit given for emission reduction measures implemented.

The Washington County OEAP has two principal components:

1. The Early Action Compact (EAC) — EAC is a Memorandum of Agreement to prepare and implement an Early Action Plan (EAP). More specifically, the EAC sets measurable milestones for developing and implementing the EAP.
2. The Early Action Plan (EAP) — EAP serves as Washington County's official air quality improvement plan, with quantified emission-reduction measures. The EAP will include all necessary elements of a comprehensive air quality plan, but will be tailored to local needs and driven by local decisions. Moreover, the EAP will be incorporated into the formal SIP and the region will be legally required to carry out this plan just as in nonattainment areas. For example, development of EAP will require the same scientific diligence and undergo the same scrutiny as the nonattainment areas' SIPs, so that the emission reduction strategies selected will be adequate to ensure the region stays in attainment of the 8-hour standard.

OEAP Versus Traditional Nonattainment

A major advantage of the region's participation in an OEAP is the flexibility afforded to the signatories in selecting emission reduction measures and programs that are best suited to local needs and circumstances. Recognizing the varied social and economic characteristics of the region, not all measures can or should be implemented by every entity.

The primary differences between OEAP and the traditional nonattainment area process are:

- The OEAP allows for more local control in selecting emission-reduction measures.
- The OEAP provides deferral of nonattainment designation and related requirements, as long as Plan requirements and milestones are met. This would prevent any related stigma associated with a nonattainment designation.
- The OEAP is designed to achieve clean air faster than under the traditional SIP process.
- Should any milestones be missed in designing or implementing the Plan, the area would automatically revert to the traditional SIP requirements, with appropriate credit given for emission reduction measures already implemented.

OEAP Timeline

The Washington County OEAP is designed to enable a local, proactive approach to ensuring attainment of the 8-hour ozone NAAQS, and so protect human health. Using the OEAP approach, the region could begin implementing by 2005 emission-reduction measures directed at attaining the 8-hour standard. This allows for a significantly earlier start than waiting for formal EPA nonattainment designation and it gives more flexibility in choosing which emission reduction strategies to implement.

The Area Encompassed By The OEAP

Washington County is the planning area for which the Early Action Compact is designed. After signing the initial compact, additional jurisdictions may be added upon request and mutual consent of all the signatory parties, due to the expansion of the nonattainment area or other reasons.

Signatories And Their Responsibilities

The individuals representing the entities that will sign this Early Action Compact are elected official from Washington County, along with representatives from the United States Environmental Protection Agency (EPA) and the Maryland Department of the Environment (MDE):

Washington County	President of the Board of Commissioners, Gregory I. Snook
MDE	Richard F. Pecora
EPA Region III	Regional Administrator or Designee

The local entities whose representatives support and sign the EAC are committed to holding primary responsibility for the development and implementation of the EAP, and for maintaining communication with all parties. These commitments by local agencies are enumerated in the following Memorandum of Agreement, along with the commitments of MDE and EPA.

After signing the initial compact, additional jurisdictions may be added upon request and mutual Consent of all the signatory parties.

Conditions For Modification Or Early Termination

This agreement may be modified at any time or terminated at any time by mutual consent of all signatory parties before formal incorporation into the SIP in 2004. Before 2004, any signatory party may withdraw from the agreement if the other signatory parties do not carry out provisions of the agreement. If a party's withdrawal from the agreement prevents the remaining signatories from satisfying any of the terms and milestones of the original agreement, the agreement will be void and the area's nonattainment designation immediately effective. Once the EAP is incorporated into the SIP, modification is considerably more difficult, as the SIP is a legally binding state and federal agreement to carry out specific emission-reduction activities.

Additional Terms of This Agreement

1. This agreement creates no cause of action against any party beyond those, if any, that may already exist under state or federal law. In addition, all parties agree that this agreement cannot be used against one another or by a third party as an enforceable order in any court proceedings. This agreement will be reviewed and modified as needed.
2. Each jurisdiction is required to discuss and formally approve and/or adopt the local emission reduction strategies included in the Early Action Plan prior to its formal submission to the state and federal agencies involved.

Washington County Early Action Compact

This EAC is between Washington County, MDE and EPA. It is for the express purpose of developing and implementing a plan that will reduce ground-level ozone concentrations in Washington County to comply with the 8-hour ozone standard by December 31, 2007 and maintain that standard until at least 2012. Failure to meet that obligation results in immediate reversion to the traditional nonattainment process.

General Provisions

- A. The signatory parties commit to develop, implement and maintain the Early Action Plan according to EPA Protocol for Early Action Compacts issued June 19, 2002 (supplemented per a letter dated October 18, 2002 from Gregg Cooke, Regional Administrator, EPA Region 6, to Robert Huston, Texas Commission of Air Quality), and adhere to all terms and conditions stated in the guidelines.
- B. If the region does not meet all the terms of the EAC, including meeting agreed-upon milestones, then it will forfeit its participation and deferred effective date of its nonattainment designation, thus having an effective nonattainment designation and becoming subject to EPA's 8-hour ozone nonattainment implementation rules.
- C. This agreement may be modified or terminated by mutual consent of all signatory parties.
- D. The signature date of the EAC is the start date of the agreement's term and the agreement remains in effect until December 31, 2007.

Local Government Responsibilities

The local governments agree to enter into a compact to develop and implement an EAP that will demonstrate attainment, by December 31, 2007, of the 8-hour ozone standard and continued maintenance of the standard until at least 2012. Washington County in coordination with MDE will develop this plan in coordination with EPA, stakeholders and the public. In this regard, the local area holds the primary responsibility for the development and implementation of the plan, as well as for maintaining communication with all parties involved. Specific local commitments to the compact and plan are:

1. Drawing up the compact, which embodies the requirements for Early Action Compacts as outlined in Sections A to F of the protocol, including a timeline for milestones.
2. Completing and signing by all parties of the compact no later than December 31, 2002.
3. Identifying and describing local strategies being considered for inclusion in the Early Action Plan no later than June 16, 2003.
4. Selecting local control strategies no later than January 31, 2004. Each jurisdiction must consider and formally approve and/or adopt the controls that make up the local component of the Early Action before this date.
5. Submitting the final Early Action Plan to state and federal agencies no later than March 31, 2004.
6. Notifying parties as soon as possible of issues and developments, which may impact performance and progress towards milestones.
7. Notifying parties as soon as possible if Compact milestones will be missed or have been missed.
8. Notifying parties as soon as possible if Compact modification/termination is to be requested.

Milestones and Reporting

1. Milestones

Table 1: Early Action Compact Milestones	
December 31, 2002	Signed EAC (All parties)
May 31, 2003	Initial Modeling Emissions Inventory Completed (<i>MDE</i>)
	Conceptual Model Completed (<i>MDE</i>)
	Base Case Modeling Completed (<i>MDE</i>)
June 16, 2003	Identify and describe local strategies being considered for inclusion in the local clean air plan (<i>Washington County (WC)</i>)
June 30, 2003	Semi-annual status reports to begin (<i>WC, MDE</i>)
October 31, 2003	Future Year Emissions Inventory Modeling Completed (<i>MDE</i>)
	Emissions trend comparison and analysis completed (<i>MDE</i>)
	Future Case Modeling Completed (<i>MDE</i>)
January 31, 2004	Attainment Maintenance Analysis Completed (<i>MDE</i>)
	One or more modeled control cases completed (<i>MDE</i>)
	Local emission reduction strategies selected (<i>WC</i>)
	Submission of preliminary EAP to MDE and EPA (<i>WC</i>)
March 31, 2004	Final Revisions to Modeled Control Cases Completed (<i>MDE</i>)
	Final Revisions to Local Control Strategies Completed (<i>MDE</i>)
	Final Revisions to Attainment Maintenance Analysis Completed (<i>MDE</i>)
	Submission of final EAP to MDE and EPA (<i>WC</i>)
December 31, 2004	Early Action Clean Air Plan Adopted and Incorporated into the SIP and submitted to EPA (<i>MDE</i>)
December 31, 2005	Local Control Strategies Implemented No Later Than This Date (<i>Implementing Agency</i>)
June 30, 2006	Semi-annual status reports on implementation of measures and assessment of air quality improvement begin on this date (<i>WC,</i>

	<i>MDE)</i>
December 31, 2007	Attainment of the 8-Hour Standard no later than this date

2. Reporting

In order to facilitate self-evaluation and communication with EPA, MDE, stakeholders, and the public, the region will assess and report progress towards milestones in a regular, public process, at least every six months, beginning with a biannual in June 2003.

Emissions Inventories

1. An **initial modeling emissions inventory** will be developed by **May 31, 2003**. This inventory will include:
 - a. Emissions modeling data for a 1996,1997,or 1999(or later) episode, which will be representative of a typical ozone season event and meets EPA episode selection guidance;
 - b. MOBILE6 data with link based Travel Demand Model (TDM) mobile data where available;
 - c. NONROAD model data adjusted for local equipment populations and usage rates (if available);
 - d. Area source data using best activity data available.
2. A 2007 **future year modeling emissions inventory** will be developed by **October 31, 2003**. This inventory will include projected future growth in ozone precursor emissions through 2007, particularly from stationary, non-road and on-road mobile sources.
3. Selection of specific episode inventories was partially determined by the conceptual model, which reflects an analysis of meteorological conditions typical of high ozone events. The conceptual model will be updated by **May 31, 2003**.
4. Emissions inventories will be compared and analyzed for trends in emission sources over time. **The emissions inventory comparison and analysis** will be completed by **May 31, 2003**.

Modeling

1. Regional photochemical modeling will be performed to provide a demonstration of attainment of the ozone standard through the local, state, and regional control strategies included in the EAP. **Base case modeling** will be completed by **May 31, 2003** and **future case modeling** will be completed by **October 31, 2003**. One or more **modeled control cases** will be completed by **January 31, 2004** with final revisions completed by **March 31, 2004**. All modeling:

- a. Will be SIP quality and perform within EPA's accepted margin of accuracy;
- b. Will be carefully documented;
- c. Will sufficiently account for projected future growth in ozone precursor emissions;
- d. Will be accomplished by MDE and reviewed by EPA;
- d. Will be used to determine the effectiveness of NO_x and/or VOC reductions. The control case(s) will be used to determine the relative effectiveness of different emission reduction strategies and to aid in the selection of appropriate emission reduction strategies.

In addition, all modeling will be based on, to the extent possible, the "Draft Guidance on the Use of Models and Other analyses in Attainment Demonstrations for the 8-hour Ozone NAAQS" (EPA-454/R-99-004, May 1999). This modeling will follow this guidance as negotiated and agreed to with the EPA Regional Office. Any deviations from this guidance and the resulting modeling will be identified and reconciled with the draft guidance. Data availability issues may limit this reconciliation.

Emission Reduction Strategies

1. All adopted Federal and State controls that have been or will be implemented by the December 31, 2007 attainment date will be included in base, future and control case modeling.
2. Additional local emission reduction strategies that are under consideration will be identified and described by June 16, 2003. Any additional strategies needed to demonstrate attainment for Washington County will then be selected by January 31, 2004, with final revisions completed by March 31, 2004. The selected strategies will be implemented as soon as practical, but no later than December 31, 2005.
3. Local emission reduction strategies will be specific, quantified, permanent and enforceable. Local controls will also include specific implementation dates and detailed documentation and reporting processes.
4. Voluntary measures can play a supporting role in the EAP. If emission reductions from voluntary emission reductions are quantified and credit is taken for them in the EAP, those emission reductions will be enforceable. Additional strategies must be implemented to meet those quantified reduction requirements if quantified voluntary measures fail. This is true for all quantified emission reductions.

5. Local emission reduction strategies will be designed and implemented by the community with stakeholder participation.
6. Local emission reduction strategies will be incorporated by the state into the SIP. In the event that the region desires to add, delete or substitute strategies after SIP submittal, EAP modifications will be treated as SIP revisions and facilitated by the state.

Maintenance for Growth

1. The EAP will include a component to address emissions growth at least five years beyond December 31, 2007, ensuring that the area will remain in attainment of the 8-hour standard during that period. Attainment maintenance analysis will be completed by January 31, 2004, with final revisions completed by March 31, 2004. The analysis will employ one or more of the following or any other appropriate techniques necessary to make such a demonstration:
 - Attainment emissions budget evaluation for maintenance demonstration year showing that future emissions remain below the attainment budget for the area;
 - Modeling analysis showing ozone levels below the 8-hour standard in 2012;
 - An annual review of growth (especially mobile and stationary source) to ensure emission reduction strategies and growth assumptions are adequate;
 - Identification and quantification of federal, state, and/or local measures indicating sufficient reductions to offset growth estimates.
2. A continuing planning process that includes modeling updates and modeling assumption verification (particularly growth assumptions) will be conducted concurrent with the tracking and reporting process for the EAP. This update and verification will be an ongoing process between the signatories, stakeholders and the public. Modeling updates and planning processes must consider and evaluate:
 - All relevant actual new point sources;
 - Impacts from potential new source growth; and
 - Future transportation patterns and their impact on air quality in a manner that is consistent with the most current adopted Long Range Transportation Plan and most current trend and projections of local motor vehicle emissions.
3. If the review of emissions growth demonstrates that adopted emission reduction strategies are inadequate to address growth in emissions, additional measures will be added to the EAP.

4. In the event that the continuing planning process identifies the need to add, delete, or substitute emission reduction strategies after the Plan has been incorporated into the SIP, the local area will initiate, and MDE will facilitate a SIP revision to accommodate changes.

Public Involvement

1. Public involvement will be conducted in all stages of planning by one or more of the following, or other appropriate party: Washington County and the Maryland Department of Environment. Outreach will include several of the following techniques: public meetings and presentations, stakeholder meetings, websites, print advertising and radio.
2. Public education programs will be used to raise awareness regarding issues, opportunities for involvement in the planning process, implementation of emission reduction strategies, and any other issues important to the area.
3. Interested stakeholders will be involved in the planning process as early as possible. Planning meetings will be open to the public, with posted meeting times and locations. Plan drafts will be publicly available, and the drafting process will have sufficient opportunities for comment from all interested stakeholders.
4. Public comment on the proposed final plan will follow the normal SIP revision process as implemented by the State.
5. Semi-annual reports detailing, at a minimum, progress toward milestones, will be publicly presented and publicly available.

The Maryland Department of Environment

The state, represented by MDE, will provide support to areas throughout the planning and implementation process, including:

1. Development of emission inventories, modeling process, trend analysis and quantification and comparison of emission reduction strategies;
2. Necessary information on all Federal and State adopted emission reduction measures, which affect the area;
3. Critical third party review of emissions inventory, modeling, and self-evaluation work;
4. Technical and strategic assistance, as appropriate, in the selection and implementation of emission reduction strategies;

5. Technical and planning assistance in developing and implementing processes to address the impact of emissions growth beyond the attainment date;
6. Maintenance of monitors and reporting and analysis of monitoring data;
7. Support for public education efforts;
8. Coordinate communication between local areas and EPA to facilitate continuing EPA review of local work.
9. Expeditious review of the locally developed plans, and if deemed adequate, proposes modification of the SIP to adopt the early action plan;
10. Adoption of emission reduction strategies into the SIP as expeditiously as possible. The final complete SIP revision must be completed, adopted, and submitted by the state to EPA by 2004. The SIP revision will include a demonstration that the area will attain the 8-hour standard by December 31, 2007.
11. If EPA withdraws the deferred effective date, thereby triggering a nonattainment designation and applicable statutory requirements, the State will submit a nonattainment SIP to EPA within 1 year of the new effective date of the nonattainment designation.


The Environmental Protection Agency

1. The EPA will provide technical assistance to the state and local area in the development of the early action plan.
2. The EPA will move quickly to review and approve completed plans by no later than nine months after submission of the SIP revision by the state.
3. At the time of designations, EPA will defer the effective date of nonattainment designation and related requirements for participating areas that fail to meet the 8-hour ozone standard as long as all terms and milestones of the EAC are being met, including submission of the early action SIP revision by 2004.
4. Provided that the monitor(s) in the area reflect attainment by December 31, 2007, EPA will move expeditiously to designate the area as attainment and impose no additional requirements.
5. If at any time the area does not meet all the terms of this EAC, including meeting

agreed-upon milestones, then it will forfeit its participation and its nonattainment designation (or redesignation if necessary) will become effective after EPA withdraws the deferred date.

- 6. If the area violates the standard as of December 31, 2007, and the area has had a nonattainment designation deferred, the area will be designated nonattainment. EPA will take action to withdraw the deferred effective date, and the area's nonattainment designation will become effective.
- 7. No area will be allowed to renew their Early Action Compact after December 31, 2007, or initiate a new compact if it has previously forfeited its participation.


Signatures,



Gregory I. Snook
President of the Board of Commissioners
for Washington County

December 20, 2002

Date



Richard F. Pecora, Secretary
Maryland Department of the Environment

Dec. 30 02

Date



EPA - Region III Administrator

Dec. 31, 2002

Date

APPENDIX A

Automotive and Light-Duty Truck Coating
Can Coating
Coil Coating
Large Appliance Coating
Paper, Fabric, Vinyl, and Other Plastic Parts Coating
Control of VOC Emissions from Solid Resin Decorative Surface Manufacturing
Metal Furniture Coating
Control of VOC Emissions from Cold and Vapor Degreasing
Flexographic and Rotogravure Printing
Lithographic Printing
Dry Cleaning Installations
Miscellaneous Metal Coating
Aerospace Coating Operations
Brake Shoe Coating Operations
Control of Volatile Organic Compounds from Structural Steel Coating Operations
Manufacture of Synthesized Pharmaceutical Products
Paint, Resin and Adhesive Manufacturing and Adhesive Application
Control of VOC Equipment Leaks
Control of VOCs Emissions from Yeast Manufacturing
Control of VOCs Emissions from Screen Printing and Digital Imaging
Control of VOCs Emissions from Expandable Polystyrene Operations
Control of Landfill Gas Emissions from Municipal Solid Waste Landfills
Control of VOCs Emissions from Commercial Bakery Ovens
Control of Volatile Organic Compounds (VOC) from Vinegar Generators
Control of VOC Emissions from Vehicle Refinishing
Control of VOC Emissions from Leather Coating
Control of VOCs from Explosives and Propellant Manufacturing
Control of VOCs Emissions from Reinforced Plastic Manufacturing
Control of Volatile Organic Compounds from Marine Vessel Coating Operations
Control of VOCs from Bread & Snack Food Drying Operations
Control of Volatile Organic Compounds from Distilled Facilities
Control of Volatile Organic Compounds from Organic Chemical Production

APPENDIX B – LIST OF RELEVANT RESEARCH AND MODELING STUDIES

Air Quality Modeling Technical Support Document for the NO_x SIP Call – Appendix F, EPA Office of Air and Radiation, "Data indicating the amount of transboundary pollution traveling into Maryland", ppF8-F9, Sept 23, 1998.

Annual Mission Summaries, B.G. Doddridge, RAMMP (Regional Atmospheric Measurement Modeling and Prediction Program), University of Maryland at College Park, Department of Meteorology, 1992-2002.

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