

**Region 3 Plan Summary
Charleston, West Virginia 8-Hour Ozone Maintenance Plan**

Title: Maintenance Plan for the Charleston, West Virginia 8-Hour Ozone Area

Federal Register Dates: May 4, 2006, 71 FR 26299 (Proposed rule); July 11, 2006, 71 FR 39001 (Final rule).

EPA Effective date: August 10, 2006

State Submittal Dates: November 30, 2005 and March 3, 2006.

Affected Areas: Kanawha and Putnam Counties

Summary of the Plan: On November 30, 2005, West Virginia submitted a maintenance plan for the Charleston area as a State Implementation Plan (SIP) revision, to assure continued attainment over the next 12 years. The quality assured data collected at the Charleston monitor satisfies the CAA requirement that the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration is less than or equal to 0.08 parts per million (ppm). West Virginia uses the Aerometric Information Retrieval System (AIRS) as the permanent database to maintain its data and quality assures the data transfers and content for accuracy.

| Table 1: Charleston Nonattainment Area Fourth Highest 8-hour Average Values; Charleston Monitor, AIRS ID 54-033-4000 | |
|---|---|
| Year | Annual 4th High Reading (ppm) |
| 2002 | 0.087 |
| 2003 | 0.088 |
| 2004 | 0.069 |
| 2005 | 0.079 |
| The average for the 3-year period 2002 through 2004 is 0.081 ppm | |

In addition to maintaining the key elements of its regulatory program, West Virginia will acquire ambient and source emissions data to track attainment and maintenance. West Virginia proposes to fully update its point, area, and mobile emission inventories at 3-year intervals as required by the Consolidated Emissions Reporting Rule (CERR) to assure that its growth projections relative to emissions in these areas are sufficiently accurate to assure ongoing attainment with the NAAQS.

Emissions Inventory: The 2004 attainment year VOC and NO_x emissions for the Charleston area are summarized, along with the 2009 and 2018 projected emissions for this area, in Tables 2 and 3 below, which covers the demonstration of maintenance for this area. West Virginia chose 2009 as an interim year in the 12-year maintenance demonstration period to demonstrate that the

VOC and NOx emissions are not projected to increase above the 2004 attainment level during the time of the 12-year maintenance period.

| Table 2: Total VOC Emissions for 2004-2018 (tpd) | | | |
|---|---------------------------------------|---------------------------|---------------------------|
| Source Category | 2004 VOC Emissions¹ | 2009 VOC Emissions | 2018 VOC Emissions |
| Mobile | 13.4 | 11.6 | 7.2 |
| Nonroad | 5.3 | 4.6 | 3.5 |
| Area | 20.9 | 20.1 | 22.1 |
| Point² | 10.0 | 10.4 | 12.2 |
| Total | 49.6 | 46.7 | 45.0 |

¹ 2004 Emissions estimated by linear interpolation for all sectors except highway and EGUs

² Non-EGU emissions updated for 2008 NOx SIP Call

| Table 3: Total NOx Emissions 2004-2018 (tpd) | | | |
|---|---------------------------------------|---------------------------|---------------------------|
| Source Category | 2004 NOx Emissions¹ | 2009 NOx Emissions | 2018 NOx Emissions |
| Mobile | 22.0 | 19.8 | 8.2 |
| Nonroad | 12.7 | 12.0 | 10.1 |
| Area | 2.5 | 2.6 | 2.9 |
| Point² | 87.8 | 67.9 | 59.4 |
| Total | 125.0 | 102.3 | 80.6 |

¹ 2004 Emissions estimated by linear interpolation for all sectors except highway and EGUs

² Non-EGU emissions updated for 2008 NOx SIP Call

Control Measures/Regulations Included as Part of the Plan: West Virginia prepared comprehensive VOC and NOx emissions inventories for the Charleston area, including point, area, mobile on-road, and mobile non-road sources for a base year of 2002. Between 2002 and 2004, VOC emissions were reduced by 2.9 tpd, and NOx emissions were reduced by 49.7 tpd, due to the following permanent and enforceable measures implemented or in the process of being implemented in the Charleston area:

| Table 4: Total VOC and NOx Emissions for 2002 and 2004 (tpd) | | | | | |
|---|--------------|-------------|----------------|---------------|--------------|
| Volatile Organic Compounds (VOC) | | | | | |
| Year | Point | Area | Nonroad | Mobile | Total |
| Year 2002 | 10.1 | 21.2 | 5.5 | 15.7 | 52.5 |
| Year 2004* | 10.0 | 20.9 | 5.3 | 13.4 | 49.6 |
| Diff. (02-04) | -0.1 | -0.3 | -0.2 | -2.3 | -2.9 |

| Nitrogen Oxides (NOx) | | | | | |
|--|--------------|---------------|----------------|---------------|--------------|
| Year | Point | Area * | Nonroad | Mobile | Total |
| Year 2002 | 133.8 | 2.4 | 13.0 | 25.5 | 174.7 |
| Year 2004* | 87.8 | 2.5 | 12.7 | 22.0 | 125.0 |
| Diff. (02-04) | -46.0 | +0.1 | -0.3 | -3.5 | -49.7 |
| * 2004 Emissions estimated by linear interpolation for all sectors except highway and point EGUs | | | | | |

West Virginia has demonstrated that the implementation of permanent enforceable emissions controls have reduced local VOC and NOx emissions. Mobile source emissions reductions programs currently in effect are:

- National Low Emission Vehicle (NLEV);
- Motor vehicle fleet turnover with new vehicles meeting the Tier 2 standards; and,
- Clean Diesel Program.

Nearly all of the reductions in NOx are attributable to the implementation of the NOx SIP Call. West Virginia has indicated in its submittal that the implementation of the NOx SIP Call, with its mandatory reductions in NOx emissions from Electric Generating Units (EGUs) and large industrial boilers (non-EGUs), reduced NOx emissions throughout the Charleston area. NOx emissions from EGUs in the Charleston area were reduced by 6,798.4 tons between 2002 and 2004. Also, NOx emissions from non-EGU sources in the Charleston area were reduced by 806.8 tons between 2003 and 2004. West Virginia believes that the improvement in ozone air quality from 2002 to 2004 was the result of identifiable, permanent and enforceable reductions in ozone precursor emissions for the same period.

West Virginia has also identified, but not quantified, additional reductions in VOC emissions that will be achieved as a co-benefit of the reductions in the emission of hazardous air pollutants (HAPs) as a result of implementation of EPA's Maximum Achievable Control Technology (MACT) standards.

Other Federal regulations, such as the non-road diesel, 69 FR 39858 (June 29, 2004), the heavy duty engine and vehicle standards, 66 FR 5002 (January 18, 2001) and the new Tier 2 tailpipe standards for automobiles, 65 FR 6698 (January 10, 2000), are also expected to greatly reduce emissions throughout the country and thereby reduce emissions impacting the Charleston area monitor. The Tier 2 standards came into effect in 2004, and by 2030, EPA expects that the new Tier 2 standards will reduce NOx emissions by about 74 percent nationally.

In addition to the permanent and enforceable measures, the Clean Air Interstate Rule (CAIR), promulgated May 12, 2005, (70 FR 25161) should have positive impacts on West Virginia's air quality. CAIR, which will be implemented in the eastern portion of the country in two phases (2009 and 2015) should reduce long range transport of ozone precursors, which will have a beneficial effect on the air quality in the Charleston area.

Currently, West Virginia is in the process of adopting rules to address CAIR through state rules 45CSR3, 45CSR40, and 45CSR41, which require annual and ozone season NO_x reductions from EGUs and ozone season NO_x reductions from non-EGUs. West Virginia is required to submit these rules to EPA as a SIP revision by September 11, 2006.

West Virginia’s maintenance plan for the Charleston area has an additional provision: Based on the 2002 inventory data and calculation methodology, it is expected that area and mobile source emissions would not exhibit substantial increases between consecutive periodic year inventories. However, if significant unanticipated emissions growth occurs, it is expected that point sources would be the cause. West Virginia regulation 45CSR29 requires significant point source emitters in six counties, including Kanawha and Putnam, to submit annual emission statements which contain emission totals for VOCs and NO_x. Any significant increases that occur can be identified from these reports without waiting for a periodic inventory. This gives West Virginia the capability to identify needed regulations by source, source category and pollutant and to begin the rule promulgation process, if necessary, in an expeditious manner.

Conformity Process/Motor Vehicle Emissions Budgets (MVEB): The maintenance plan identifies the VOC and NO_x MVEBs for transportation conformity purposes for the years 2004, 2009, and 2018, as summarized in Tables 5 and 6 below:

| Table 5: Anthropogenic VOC Emissions (tpd) | | | |
|--|-----------------|-----------------|-----------------|
| Source Category | 2004 Attainment | 2009 Projection | 2018 Projection |
| Point – EGU | 0.6 | 1.0 | 1.0 |
| Point – Non-EGU | 9.4 | 9.4 | 11.2 |
| Area | 20.9 | 20.1 | 22.1 |
| On-Road Mobile | 13.4 | 9.7 | 6.0 |
| NonRoad Mobile | 5.3 | 4.6 | 3.5 |
| Total | 49.6 | 44.8 | 43.8 |
| Safety Margin = Decrease from 2004 | | 4.8 | 5.8 |
| Table 6: Anthropogenic NO_x Emissions (tpd) | | | |
| Source Category | 2004 Attainment | 2009 Projection | 2018 Projection |
| Point – EGU | 53.0 | 37.2 | 26.0 |
| Point – Non-EGU | 34.8 | 30.7 | 33.4 |
| Area | 2.5 | 2.6 | 2.9 |
| On-Road Mobile | 22.0 | 16.5 | 6.8 |
| NonRoad Mobile | 12.7 | 12.0 | 10.1 |
| Total | 125.0 | 99.0 | 79.2 |
| Safety Margin = Decrease from 2004 | | 26.0 | 45.8 |

A “safety margin” is the difference between the attainment level of emissions (from all sources) and the projected level of emissions (from all sources) in the maintenance plan which continues to demonstrate attainment of the standard. The attainment level of emissions is the level of emissions during one of the years in which the area met the NAAQS.

Contingency Measures: The contingency measures in the maintenance plan for the 8-hour ozone NAAQS will only be triggered by a violation of the 8-hour ozone NAAQS. West Virginia's maintenance plan lays out two situations where the need to adopt and implement a contingency measure to further reduce emissions would be triggered:

(i) If the triennial inventories indicate emissions growth in excess of 10 percent of the 2002 base-year inventory or if a monitored air quality exceedance pattern indicates that an ozone NAAQS violation may be imminent - This exceedance pattern would include, but is not limited to, the measurement of three exceedances or more occurring at the same monitor during a calendar year. The plan also states that comprehensive tracking inventories will also be developed every 3 years using current EPA-approved methods to assure that its growth projections relative to emissions in the area are sufficiently accurate to assure ongoing attainment with the NAAQS. If the 2002 base-year inventory or if a monitored air quality exceedance pattern occurs, West Virginia will evaluate existing control measures to ascertain if additional regulatory revisions are necessary to maintain the ozone standard.

(ii) In the event that a violation of the 8-hour ozone standard occurs at the Kanawha County/Charleston monitor - West Virginia, in consultation with EPA Region III, will then implement one or more of the following measures to assure continued attainment:

- Extend the applicability of 45CSR21 (VOC/RACT rule) to include source categories previously excluded (e.g., waste water treatment facilities);
- Revised new source permitting requirements requiring more stringent emissions control technology and/or emissions offsets;
- NOx RACT requirements;
- Regulations to establish plant-wide emissions caps (potentially with emissions trading provisions);
- Establish a Public Awareness/Ozone Actions Days Program, a two pronged program focusing on increasing the public's understanding of air quality issues in the region and increasing support for actions to improve the air quality, resulting in reduced emissions on days when the ozone levels are likely to be high.
- Initiate one or more of the following voluntary local control measures:
 - (1) Bicycle and Pedestrian Measures - A series of measures designed to promote bicycling and walking including both promotional activities and enhancing the environment for these activities;
 - (2) Reduce Engine Idling - Voluntary programs to restrict heavy duty diesel engine idling times for both trucks and school buses;
 - (3) Voluntary Partnership with Ground Freight Industry - A voluntary program using incentives to encourage the ground freight industry to reduce emissions;
 - (4) Increase Compliance with Open Burning Restrictions - Increase public awareness of the existing open burning restrictions and work with communities to increase compliance; and
 - (5) School Bus Engine Retrofit Program - Have existing school bus engines retrofitted to lower emissions.

The following schedule for adoption, implementation and compliance applies to the contingency measures concerning the option of implementing regulatory requirements.

- Confirmation of the monitored violation within 45 days of occurrence;
- Measure to be selected within 3 months after verification of a monitored ozone standard violation;
- Develop rule within 6 months of selection of measure;
- File rule with state secretary (process takes up to 42 days);
- Applicable regulation to be fully implemented 6 months after adoption.

The following schedule for adoption, implementation and compliance applies to the voluntary contingency measures.

- Confirmation of the monitored violation within 45 days of occurrence;
- Measure to be selected within 3 months after verification of a monitored ozone standard violation;
- Initiation of program development with local governments within the area by the start of the following ozone season.

Requirement for Continued Maintenance

Section 175A(b) of the CAA will also require West Virginia to submit a revision to the SIP eight years after the original redesignation request is approved to provide for maintenance of the NAAQS in the Charleston area for total of 20 years following redesignation to attainment of the 8-hour NAAQS.

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