

Boyd County, Kentucky Sulfur Dioxide Attainment Plan (A portion of Boyd County)

Background of the Plan: “That” portion of Boyd County, south of UTM northing line 4251 km, was originally designated nonattainment for the primary sulfur dioxide (SO₂) NAAQS on March 3, 1978. Pursuant to the Commonwealth of Kentucky’s request, EPA on November 2, 1979 (44 FR 63104), modified the geographic area to include as nonattainment only the area around the Ashland Oil Plant (Boyd County south of UTM Northing Line 4251km). Additionally, ambient monitoring indicated that the area was not attaining the secondary SO₂ NAAQS. As a result of the emission limit review for compliance with the 1985 Good Engineering Practice (GEP) stack height regulations (50 FR 27892, July 8, 1985), Kentucky and EPA determined that a major petrochemical refinery (i.e., Ashland Petroleum Company’s Catlettsburg refinery - now Marathon Oil), had stacks that were in excess of GEP requiring a modeling demonstration to determine compliance with the SO₂ standards. In 1992 GEP modeling conducted by the Commonwealth indicated SO₂ violations attributable to: (1) the Catlettsburg refinery in Kentucky, (2) the very large maximum allowable emission limits at the Calgon chemical plant in Kentucky, and (3) Aristech/Neal (now Sunoco) facility in West Virginia. Currently, Boyd County is not attaining the primary and secondary NAAQS based on air quality dispersion modeling. EPA has been working with the Commonwealth and the West Virginia Department of Environmental Protection to resolve modeled SO₂ violations and to develop a State Implementation Plan (SIP) for several years.

Summary: The Commonwealth of Kentucky is developing an attainment demonstration to address the modeled violation detected in the Ashland Oil Good Engineering Practice modeling and subsequent modeling projects. EPA is currently modeling the base case scenario for the area using the proposed regulatory model, AERMOD. The extent of the modeled violations and the two outstanding sources needing emission limit revisions (i.e., Calgon in Kentucky and Aristech in West Virginia) have been identified. Significant emission reductions from the Catlettsburg Refinery, Calgon and the latest emissions configured from the Aristech facility were assumed in the modeling to determine their effects on compliance with the SO₂ NAAQS in the new modeling.

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