

US EPA ARCHIVE DOCUMENT

**Lancaster “Bump-Down” Request  
Additional Information  
August 23, 2004**

This enclosure includes additional information concerning the Pennsylvania Department of Environmental Protection’s (PA DEP’s) request to have Lancaster County reclassified as a marginal eight-hour ozone non-attainment area. PA DEP’s original “bump-down” request was submitted to U.S. Environmental Protection Agency (EPA) Region III on July 9, 2004.

Information in this submission includes zero-out CALGRID model results for Lancaster County and the entire Commonwealth of Pennsylvania. It also includes a brief summary of emission controls enacted in Lancaster County by the Commonwealth of Pennsylvania (see attached table).

**Summary of CALGRID Runs**

CALGRID is a PC-based ozone-modeling system developed by EarthTech for the Ozone Transport Commission (OTC). The model was designed as a tool to help the OTC assess different emission control strategies. PA DEP will attempt to produce additional CALGRID documentation.

Zero-out runs were run with CALGRID to estimate ozone transport from Lancaster County. The model uses meteorological data from one of the OTAG episodes; July 5-15, 1995. Ozone concentrations during this episode were well above the eight-hour standard throughout the northeast. Anthropogenic emissions from Lancaster County were set to zero. Emissions were based on the 2010 CAA emission files developed by EPA for its Clear Skies modeling. For comparison, a zero-out CALGRID run was done for the entire Commonwealth of Pennsylvania. The results of these runs are summarized in Figure 1 and Figure 2.

CALGRID suggests ozone transport from Lancaster County is not significant compared with transport from the entire Commonwealth of Pennsylvania. The model indicates emissions from Lancaster County contribute to a maximum increase of nine parts per billion (ppb) in neighboring Chester County over the entire episode. In contrast, CALGRID indicates the Commonwealth of Pennsylvania contributes up to 45 ppb in regions of New Jersey and New England. Therefore, CALGRID suggests Lancaster County’s emissions contribute to minimal ozone generation, which is largely confined to areas inside the Commonwealth of Pennsylvania.

Figure 1.

Episode Max 8-hr O<sub>3</sub> Difference (ppb)  
7/95 Met & 2010 CAA Base vs. No Lancaster Co. Emissions

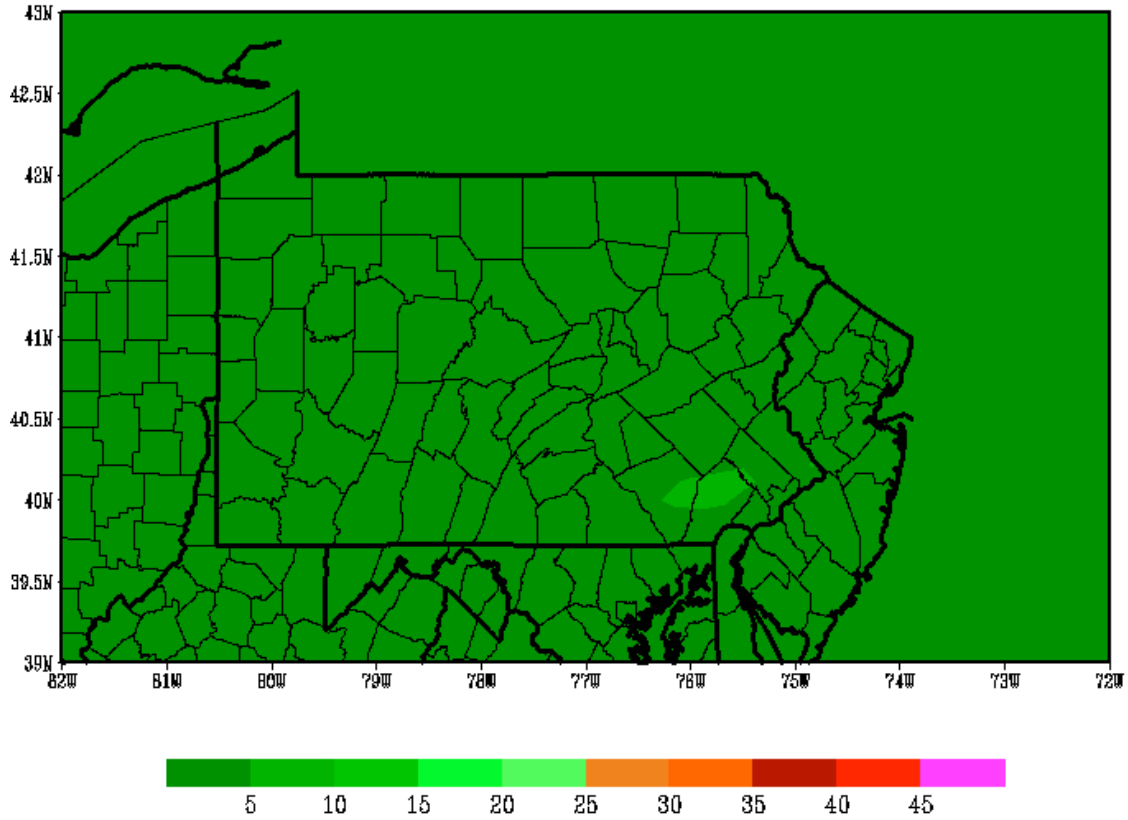


Figure 2.

Episode Max O3 Difference (ppb)  
Between 7/95 Base Case and No PA Emissions

