

Analysis of Emissions from Natural Gas Production in the Barnett Shale

Executive Summary

Dr. Armendariz's report *Emissions from Natural Gas Production in the Barnett Shale* develops an emissions inventory (EI) of oil and gas exploration and production (E&P) activities in the Barnett Shale area. While the inventory estimates appear reasonable, the report depicts an incomplete picture of the entire Barnett Shale EI. Barnett Shale E&P emissions represent only a percentage of the area's entire EI, which is dominated primarily by motor vehicle nitrogen oxides (NO_x) emissions and biogenic volatile organic compounds (VOC) emissions.

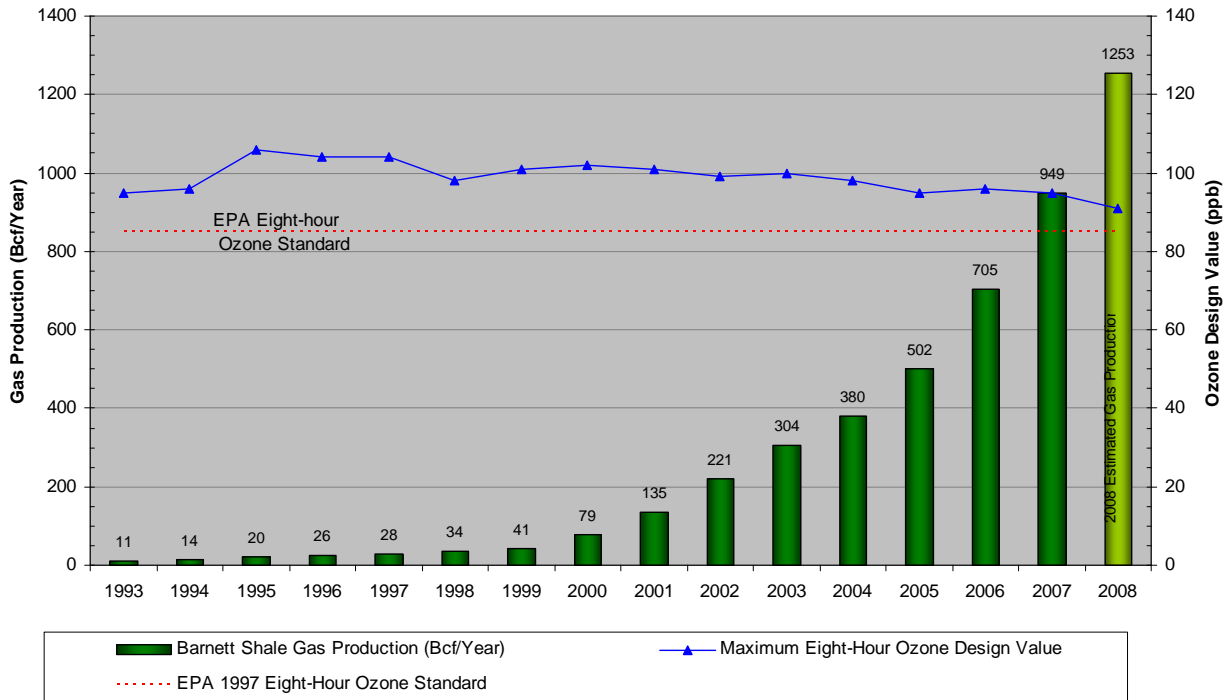
When attempting to place Barnett Shale E&P emissions in perspective, the author combines NO_x and VOC emissions to create an unrealistically large number that exaggerates the relative significance of these emissions with regards to ozone formation in the DFW nonattainment area.

Combining NO_x and VOC emissions as the report does over-simplifies the chemistry that underlies ozone formation. Photochemical modeling of the DFW nonattainment area has shown that ozone is much more responsive to NO_x emissions than to VOC emissions, and so reducing NO_x emissions is the most effective path to controlling ozone.

The report's oversights in EI development result in misleading conclusions regarding potential control strategies. Identified emissions reduction opportunities in the report are based on the uncertain assumption that Barnett Shale emissions decreases would significantly reduce ozone formation in the DFW nonattainment area. The TCEQ has already investigated many of the report's proposed emissions control strategies. These strategies might benefit the Barnett Shale counties, but would not likely benefit the DFW area.

Most importantly, the report ignores data demonstrating that, despite the dramatic increases in Barnett shale gas production since 2000, the long-term trend shows that ozone design values measured in the DFW area have been decreasing.

Dallas-Ft. Worth Ozone Design Values Compared to Barnett Shale Natural Gas Production



Adding more control strategies based on short-term changes in emissions trends is often not cost effective, and generates few benefits for improving long-term air quality.