

# Air Emissions in the Barnett Shale

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The Environmental Protection Agency (EPA) has had a long-standing interest in the air quality throughout North Texas, and in 1991 it declared the greater Dallas/Fort Worth region to be an “ozone nonattainment area.” The Texas Commission on Environmental Quality (TCEQ) has found some success improving the region’s air quality, but the EPA still considers the region a nonattainment area as it tightens its rules.

While the TCEQ continues to work to meet the known ozone emissions problem, it has focused some of its recent efforts on uncovering sources of benzene. The TCEQ has surveyed much of the urban areas in the Barnett Shale region to determine the impact natural gas drilling and production has had on the quantity of benzene present in the air.

## Air Quality Findings

- The TCEQ conducted an intensive five-county air monitoring survey in August, October and November 2009 at a total of 94 sampling locations
- At the majority of sites, chemicals were either **not detected or below levels of health concern**
- Mechanical problems at two sites in Wise County were identified and corrected
- An additional 19 sites were identified for further evaluation, but **no immediate public health threat** was identified
- Additionally, the TCEQ conducted a three-day intensive air-monitoring effort in December 2009 across the city of Fort Worth at a total of 126 natural gas production facilities
- No pollutants – including benzene – were found at levels that would be a cause for concern

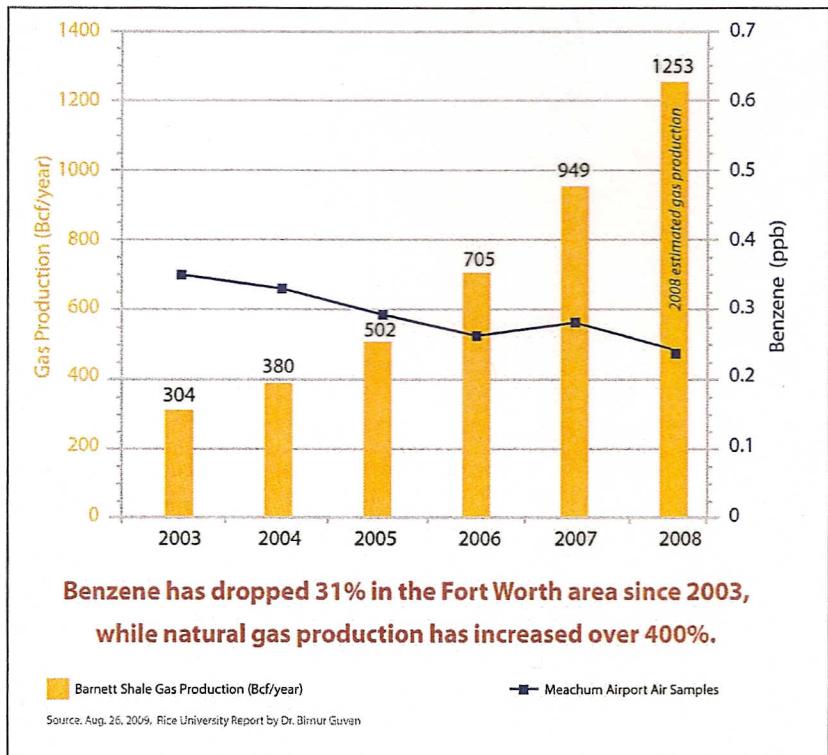
## TCEQ Action

- The TCEQ has indicated it will continue to respond to citizen complaints concerning oil and gas facilities within 12 hours
- TCEQ installed two additional long-term monitoring locations at Eagle Mountain Lake and the community of DISH in Denton County
- TCEQ is monitoring and testing wellsites throughout the Barnett Shale area
- For more information on TCEQ monitoring and testing, please visit:  
<http://tceq.state.tx.us/implementation/barnettshale/bshale-main>

## Benzene Levels Decreasing

- Long-standing TCEQ monitoring locations near oil and gas production facilities in the Fort Worth area have shown a **decline in benzene levels** despite the significant **increase in natural gas production** over the past seven years
- The TCEQ surveys support the natural gas industry’s assertion that production of natural gas in the Barnett Shale does not negatively impact the ambient air quality
- Benzene levels remain below the long-term Effects Screening Levels, levels designated by the TCEQ to trigger more evaluation

- The majority of natural gas produced in Tarrant, western Dallas and eastern Johnson counties has 0.001% or 1/1,000th of 1% benzene in the gas stream as compared to approximately 0.5 - 1% in gasoline
- The EPA is lowering the amount of benzene allowed in gasoline because of its concern about the high concentrations of benzene



## About Benzene

- Benzene is a colorless chemical that occurs naturally or can be manufactured
- Benzene is not limited to the drilling and production of natural gas
- Benzene is widely used in the U.S. and ranks in the top 20 chemicals by production volume according to the Centers for Disease Control and Prevention (CDC)
- According to the CDC, major sources of benzene include:
  - Tobacco smoke
  - Fireplaces
  - Gasoline
  - Motor vehicle exhaust
  - Fueling stations
  - Building materials
  - Pharmaceutical manufacturing
  - Paints
  - Industrial emission

### Sources

- \* Centers for Disease Control and Prevention website - <http://emergency.cdc.gov/agent/benzene/basics/facts.asp> – February 19, 2010
- \* Chesapeake Energy gas stream analysis – February 12, 2009
- \* Texas Commission on Environmental Quality – 1.27.10 Press Release – TCEQ Completes Study on Air Emissions in Barnett Shale
- \* Texas Commission on Environmental Quality – 1.27.10 Interoffice Memorandum – Health Effects Barnett Shale
- \* Texas Commission on Environmental Quality – 1.12.10 Press Release – Oil and Gas Air Tests in Ft. Worth Find "No Cause for Concern"
- \* Texas Commission on Environmental Quality – 1.11.10 Presentation to Fort Worth – Sadlier FW Review