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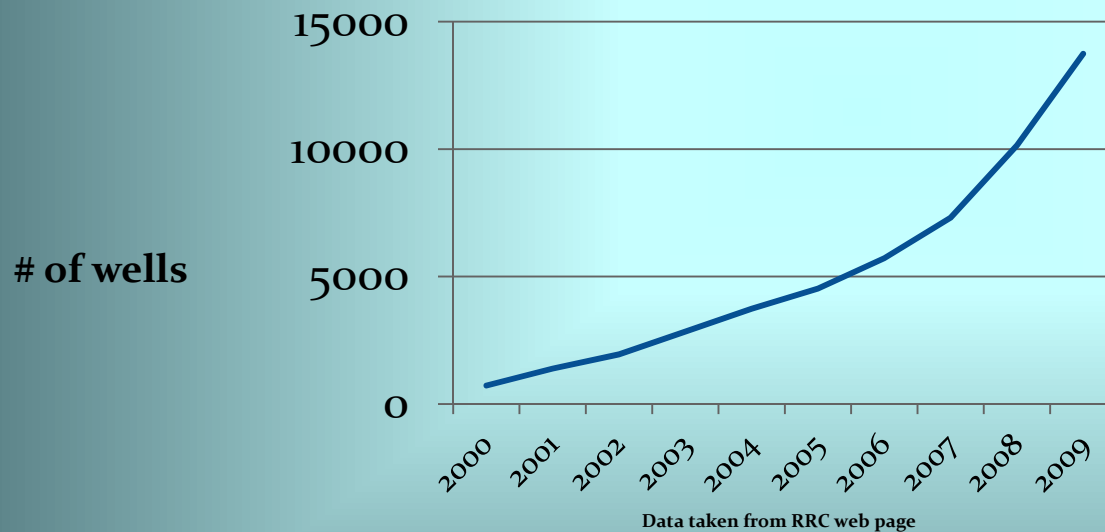
DFW Region Office

Key Discussion Points

- Barnett Shale formation
- Communication Issues
- Local Ambient Air Quality Data
- Long-Term Stationary Monitoring
- Handheld Monitoring Instruments
- Research related to Emissions Inventory
- Investigative Presence and Complaint Response
- Rulemaking
- General Findings

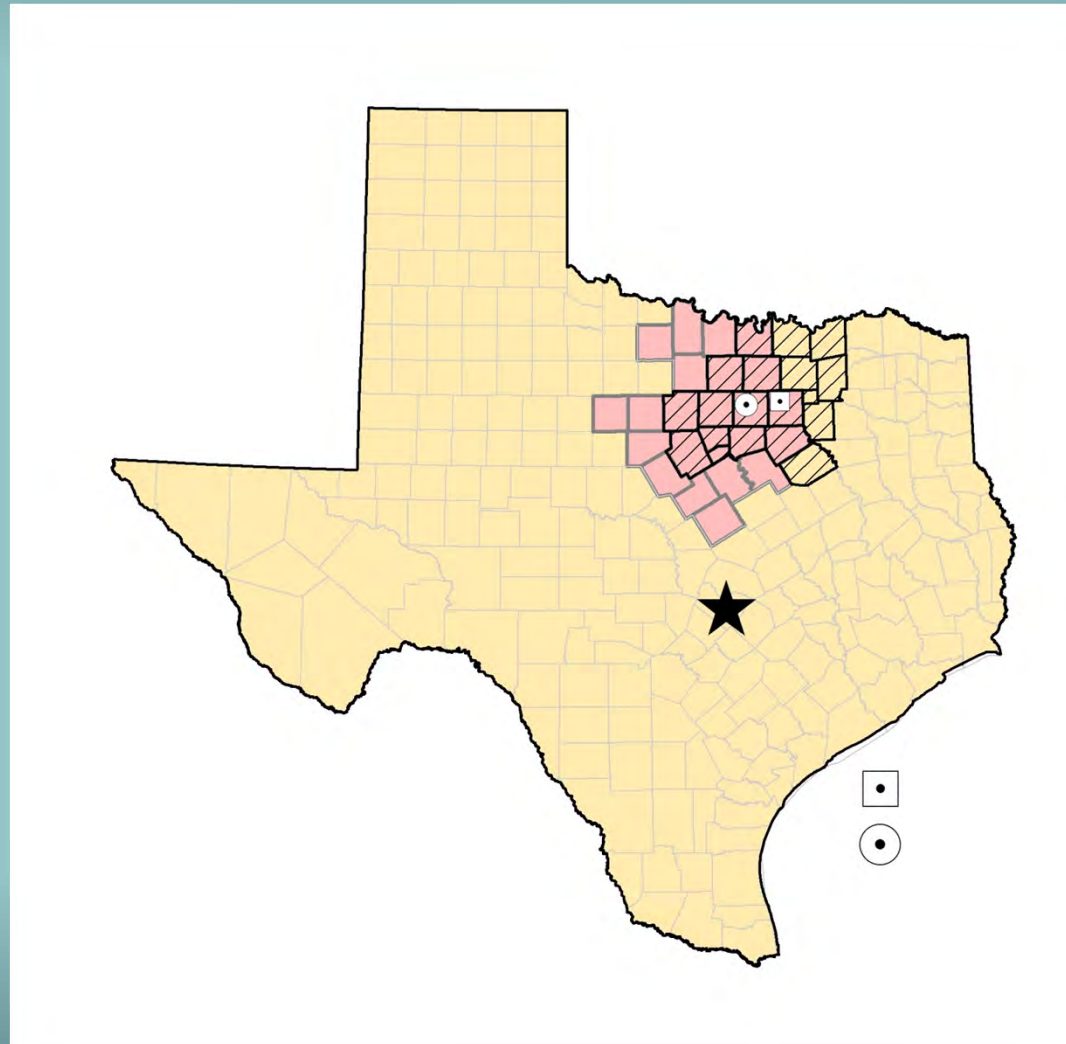
Barnett Shale formation

- There has been tremendous growth in gas exploration activities in the Barnett Shale over the last several years.



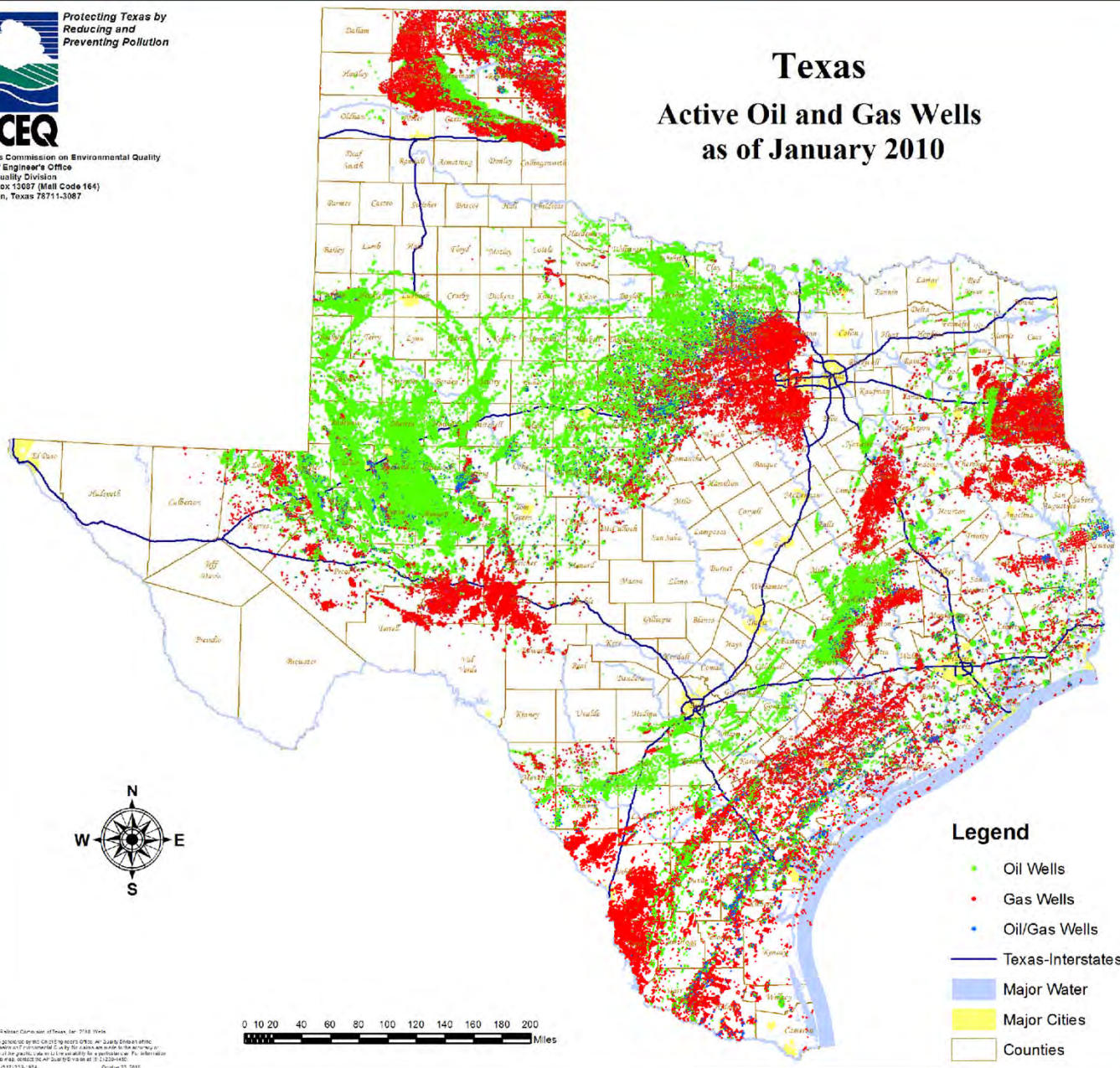
- Currently there are over 14,000 wells in the Barnett Shale

Barnet Shale Counties with DFW Region Overlay



Texas

Active Oil and Gas Wells as of January 2010



Source Data: Various; Compiled by TCEQ, Jan. 2010. Wells
This map was prepared by the Chief Engineer's Office, Air Quality Division, TCEQ. It is not intended to be used for any purpose other than that for which it was prepared. The user assumes all liability for any use of this information other than that for which it was prepared. October 20, 2010

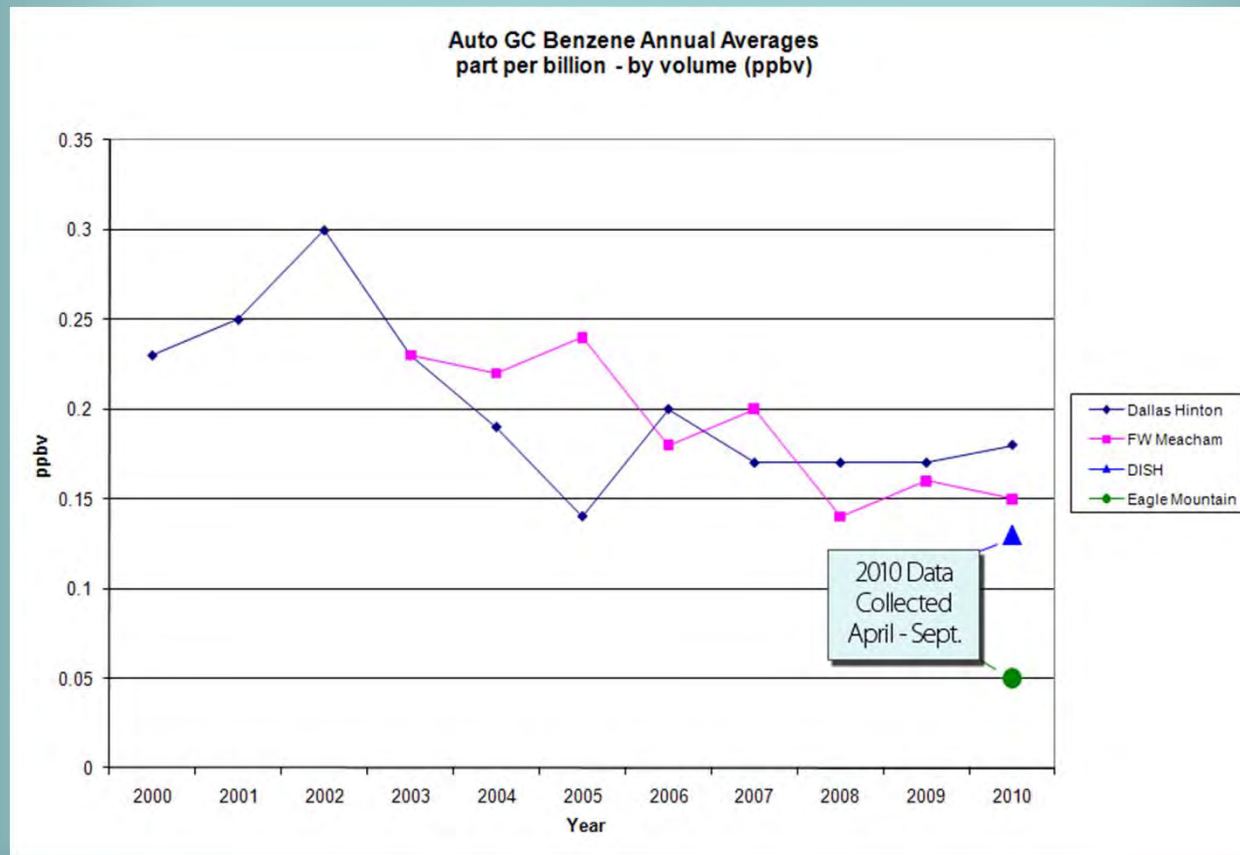
Communication

- Conducted an Oil & Gas Workshop for industry representatives
- Added an Oil & Gas track to the TCEQ Trade Fair
- Held an Advanced Air Permitting Seminar that included Oil and Gas presentations
- Developed a guidance document: *Common Environmental Requirements for Regulated Oil and Gas Operators*
- Conducted several workshops to assist the regulated community in understanding the compliance requirements
- Created a web page that contains actions and issues concerning the Barnett Shale area
<http://www.tceq.texas.gov/implementation/barnettshale/bshale-main>
- Developed an interactive map to show the location and results of air sampling
- Created a site where the public can sign up to receive email updates about the Barnett Shale area and related news items

Local Ambient Air Quality Data

- Prior to 2009, there were only two stationary monitors that included auto GC's
- Early efforts to address this involved use of innovative, helicopter-mounted HAWK technology
- Flyovers were conducted in 2005 and 2010
- The 2010 flyover, resulted in images of over 5,000 individual storage tanks and identified 88 sources of significant hydrocarbon emissions.
- The TCEQ has followed up via ground investigations to ensure that appropriate actions have been taken

DFW AutoGC Benzene Annual Averages



Long-Term Stationary Monitoring

- Effort to supplement two existing Auto GCs (in Dallas and Fort Worth)
- First, four additional GC's were added near Eagle Mountain Lake, in the Town of Dish, the Town of Flower Mound, and the City of Decatur.
- An additional 5 Auto GC's are slated for placement in the Barnett Shale within the next 12 months
- Real-time data from the Auto GC's is available on the TCEQ webpage

2010 North Texas Air Monitors

Source Data: Railroad Commission of Texas, Jan. 2010; Wellhead Commission of Texas, Barnett Shale Counties (Oct. 2006); TCEQ Field Operations - Air Monitoring Sites (Sept. 2010)

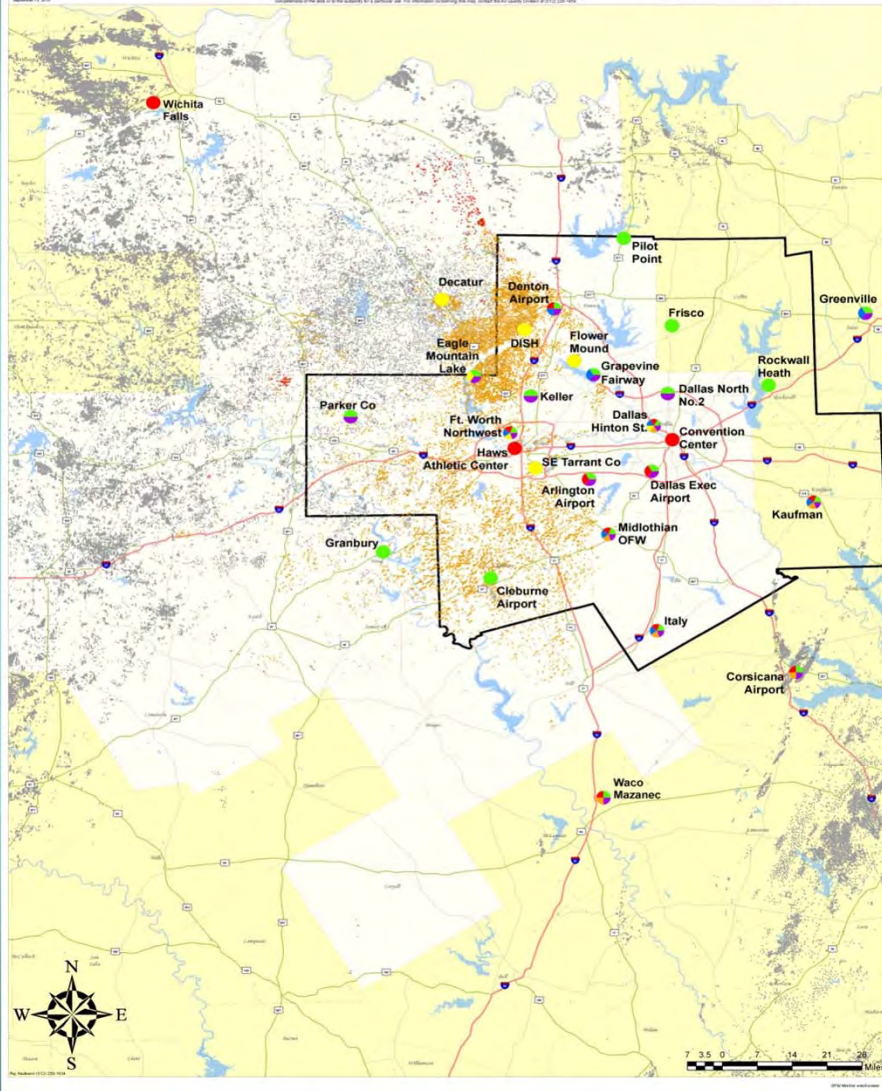
Legend

Barnett Shale Formation Wells

- Network East Field
- Oil
- Gas
- Oil/Gas
- Non Barnett Shale Formation Well
- Other Texas Counties
- Barnett Shale Counties
- DFW Nonattainment Counties

Monitors 2010

- CO
- CO2e
- PM 2.5
- VOC Canister Network
- AuSO₄
- SO₂
- NOx



Handheld Monitoring Instruments

- Provides short-term data – the equivalent of a snapshot of air quality for a specific time and place



- Short-term data allows the TCEQ to make assumptions about the potential for health effects after a short-term exposure to the monitored concentrations
- Short-term data also helps the TCEQ determine where to focus resources

Handheld Monitoring Instruments

- Since 2005, the TCEQ has purchased 11 GasFind IR cameras and numerous other handheld, state-of-the-art, air monitoring instruments



Emissions Improvements Research

- Flash Emissions model evaluation
- Drilling rig emissions project
- DFW compressor engine project
- Oil and gas model evaluation
- Emissions inventory guidance improvements
- Engine fleet DFW nonattainment area survey

Oil and Gas Equipment and Emission Inventory

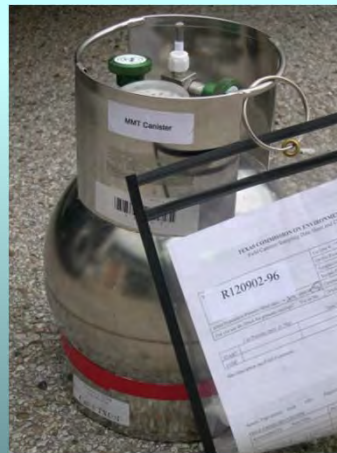
- Phase I – the first phase of the inventory request asked for basic information from producers and pipeline companies in the 24-county area. County level data is available at the Barnett Shale Web page.
- Phase II – the second phase of the inventory request requires more detailed information for each piece of equipment reported in Phase I, including exact location and estimated emissions.
- The inventories were required to be submitted to the TCEQ before January 14, 2011

Investigative Presence and Complaint Response

- Implemented a 12-hour response time for all complaints received concerning oil and gas facilities in the 24-county Barnett Shale area
- Added seven additional investigators to the DFW Region Office and created a Barnett Shale team
- Allocated four handheld infrared cameras and additional VOC monitoring equipment to the DFW Region Office
- Conduct periodic reconnaissance investigations in selected areas
- Conducts scheduled compliance investigations at natural gas sites

Investigative Presence and Complaint Response Cont.

- Conducts monitoring at the request of the public and other interested parties. In most cases, a canister sample will be taken.
- These canister results can be viewed on the TCEQ webpage.



Rulemaking

- The TCEQ permit by rule (PBR) and standard permit authorizations for the oil and gas sector have been reviewed.
- Revisions have been proposed to address issues such as distance between a production facility and a receptor.
- Multiple stakeholder meetings were held.
- The proposed rule was published in July 2010 and the TCEQ Commissioners are scheduled to consider adopting the revised PBR and standard permit on January 26, 2011.

What We Are Finding

- After investigating nearly 900 natural gas production and storage sites across the Barnett Shale, nearly all of the issues documented arose from human or mechanical failures.
- These items were quickly remedied and could have been avoided through increased diligence on the part of the operator.
- Corrective actions amounted to little more than replacing worn gaskets, closing open hatches, and repairing stuck valves.

Moving Forward

- The TCEQ must continue to:
 - Ensure transparency of our efforts through abundant and timely communication with all interested parties;
 - Evaluate the existing ambient air quality monitoring network and expand, as needed, through the use of established agency protocol for determining the placement of long-term, stationary monitors;
 - Apply the use of state-of-the-art handheld air monitoring equipment to assess short-term, near-source air quality;
 - Maintain a frequent, routine investigative presence while also providing timely complaint response;
 - Base our rules and permits on sound science and common sense; and
 - Apply our enforcement tools in a fair and consistent manner.

Contact Information

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Contacts & Additional Resources

- TCEQ DFW Regional Office: 817-588-5800
- File a complaint at 1-888-777-3186 or online at:
<http://www5.tceq.state.tx.us/oce/complaints>
- TCEQ Barnett Shale Information Webpage:
<http://www.tceq.state.tx.us/implementation/barnettshale/bshale-main>