



- M E M O R A N D U M -

Date: October 13, 2010
To: City of Fort Worth
From: Eastern Research Group, Inc. (ERG)
Re: Natural Gas Air Quality Study Biweekly Update #4: September 27 – October 10

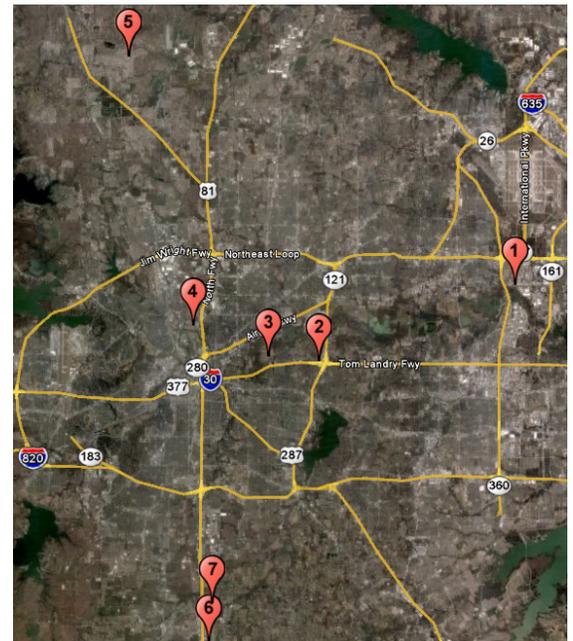
Activity Summary: Between September 27 and October 10, ERG and its subcontractors continued with field activities for the Natural Gas Air Quality Study. Both ambient air monitoring and point source emissions testing continued during this period, in accordance with specifications in the approved project plans. Additional details on ambient air monitoring and point source emission testing field activities follow.

Ambient Air Monitoring: Ambient air monitoring continued at seven monitoring stations from September 27 through October 10. The figure below shows the locations of each of the seven monitoring sites.

Over this 2 week period, air samples were scheduled to be collected on September 28, and October 1, 4, 7, and 10. We continued to have great success in sample collection, as all samples on these dates were collected as scheduled from all seven monitoring sites. The table below summarizes sample collection statistics from September 4 through October 10.

Monitoring Site	Number of Samples Collected	Number of Samples Scheduled	Collection Percentage
1	13	13	100%
2	11	13	85%
3	9	9	100%
4	26	26	100%
5	25	26	96%
6	12	13	92%
7	11	13	85%
Total	107	113	95%

(Note: Most sites had thirteen scheduled sampling dates since September 4. Monitoring sites 4 and 5 had twice as many scheduled samples, because two different types of air samples are collected at these locations. Monitoring site 3 had only nine scheduled samples, because this station was installed on September 15.)



Location of Ambient Air Quality Monitors

Point Source Emissions Testing: The emissions testing of point sources continued from September 27 through October 10. This testing is being conducted at well pads, compressor stations, and other sites with natural gas processing activity. At each point source tested, field crews used an “infrared camera” (IR camera) to determine which sources have the highest emissions. In addition to using the IR camera, toxic vapor analyzers (TVAs) and HiFlow samplers are used to measure the rate that pollutants are released to the air.

During the week of September 27, the ERG team’s field surveyors visited 8 compressor stations, 3 well pads containing 11 wells, and conducted a point source emissions survey of a drilling operation. The following week, 19 well pads containing 90 individual wells were visited, and the point source team conducted testing at a well completion activity during fracturing flowback operations. Across these 32 sites, 19 air samples were collected in canisters and then sent to the laboratory for analysis.

Through October 10, the point source team has visited 139 well pads representing 286 wells, 8 compressor stations, a drilling site, and a well completion site. At these locations, 55 canister samples have been collected. These samples will be used to estimate emission rates for volatile organic compounds (VOCs) and individual toxic chemicals (like benzene).



Field surveyor operating a Toxic Vapor Analyzer at a well pad