Supporting Information and Methodology
Review of Utility Gas Leak Reports to DPU

Legislative History

A positive step was taken in 2014 with the passage of Bill H2950 by the Massachusetts legislature. It does two things. First it requires that all reported gas leaks be graded as Grade 1 (existing or probable hazard), Grade 2 (non-hazardous, but to be repaired promptly), or Grade 3 (expected to remain non-hazardous). Unfortunately, Grade 3 leaks are not limited in size and can be substantial. Secondly, H2950 requires utilities to report annually the location and grade of each leak, the date of classification, and for each leak repaired the date of repair and its classification. This is the data from which the attached analysis was drawn.

Scorecard and Gas Leak Maps Development

Lee Humphrey reviewed all of the spreadsheets of gas leaks for 2014 for cities and towns developed by the Home Energy Efficiency Team (HEET) from data that utilities supplied to the DPU in response to Bill H2950. He developed a scorecard for each of them showing by grade of leak the beginning number of leaks in 2014, the new leaks in 2014, the leaks repaired and the number of leaks at the end of 2014.

Data supplied by the utilities was also used to map gas leaks in dozens of communities by the Home Energy Efficiency Team (HEET) which can be viewed on their website at www.squeakyleak.org.

Cost Estimation

Estimated costs for leaked gas were determined by dividing $90 million in lost gas for the Boston area reported by a Harvard/BU study published in the 2015 Proceedings of the National Academy of Sciences by 25,000 leaks reported by Boston University Professor Nathan Phillips, which yields an estimate of $3,600 annually per leak. Certainly, specific costs will vary and different numbers could be used (see below). But even at a lower estimate, the cost of this waste of this valuable resource would still be substantial.

Conservatively, 0.5% lost gas was proffered in National Grid testimony at the September 2015 Boston City Council hearing. With annual natural gas consumption in Massachusetts of 418 bcf approximated from EIA 2014 data and an average price per therm of $1.08 in August 2014, according to a BLA news release, the cost of lost gas was equivalent to $22,576,515 annually. National Grid reported 20,775 leaks to DPU in 2014 in March 2015, leading to a cost per leak of $1087 annually.

Alternatively, the aforementioned Harvard/BU study in 2015 found 2.7% lost gas equivalent to $121,913,183, using the aforementioned consumption amount and average price per therm. Dividing by the 20,775 leaks reported by National Grid to DPU yields a cost per leak of $5868 annually.

The amounts shown for estimated costs on the scorecards are close to the median of these two alternative estimates.