



Weston Gas Infrastructure Audit: Summary and Benefits

Audit Scope

Gas Safety Inc proposes to conduct a Cavity Ringdown Spectrometer Survey (CRDS) of all public roadways and provide a detailed assessment of all detected methane (CH₄) leaks.

Benefits of CRDS Technology

The CRDS method has two advantages over other technologies: higher sensitivity and greater accuracy. The CRDS technology is 1000 times more sensitive than industry standard flame ionization detection equipment, which only measures methane levels in parts per million (PPM).

Deliverables

1. CRDS survey of Weston gas pipelines, producing data files that record CH₄ detected, GPS location, time and instrument status data.
2. Keyhole Markup Language files that can easily be opened in GIS software such as Google Earth.
3. A comprehensive leak report for each fugitive emission recorded by the CRDS. Each report records: location, source, gas migration area, leak classification and status of affected vegetation. Reports will be provided digitally in PDF format.

Cost

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|---|-----------------------------|
| • CRDS survey of Weston gas infrastructure | \$ 3,500 |
| • Full audit of all leaks identified in CRDS @\$100 per location ¹ | \$14,100 - \$25,000 |
| • Legal /administrative costs ² | \$ 1,500 |
| Total Range | \$ 19,100 - \$30,000 |

Benefits to Weston

1. **Maps ALL Leaks:** Accurately captures location, size and condition of all gas leaks – in Acton 100% more CH₄ leaks were detected following audit
2. **Expedites Urgent Repair:** Activates more urgent repair of any previously unidentified or mis-classified leaks – following the audit in Acton, 95 leaks were classified as grade 1 or grade 2 which require more urgent repair and monitoring under current legislation
3. **Reduces Carbon Footprint:** Identifies all “environmentally significant” leaks (>2,000 ft²) to prioritize repair of the largest leaks in accordance with MGL Title XXII, ch164, s144 – 7% of the gas leaks in MA are gushing 50% of the lost gas³
4. **Saves Money:** Informs investment decisions for Green Architecture and tree replacement – in Wellesley 110 trees removed since 2004 were located near the top 10% of gas leaks identified by the audit; estimated cost of tree removal \$1,000⁴
5. **Supports Legislative Action:** Data gathered can be combined with other town data as evidence to support legislative agenda regarding more rigorous regulation of gas utilities – Wellesley provided testimony to both DPU and Joint Committee on Telecommunications, Utility and Energy in 2018 session

¹ Industry reported data indicates 141 leaks 12/31/17 – Weston could expect the CRDS survey to identify up to 250 leaks

² Weston may leverage the report to recoup costs associated with tree loss or pursue legal action

³ “Natural” gas is 95% methane; methane traps 86x more heat than CO₂ in its first 20 years in the atmosphere – 2015 PNAS Harvard/Boston University McCain Study and 2013 IPCC report

⁴ Town of Wellesley successfully settled a claim with NGRID for \$7.7k for tree damage (8/13)