

Community Response and Health Assessment of PCB Release from a Natural Gas Pipeline Rupture

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In March of 1999 during sewer construction, a natural gas main pipeline was ruptured in a residential area of Mentor, Ohio. The rupture caused a 200-foot high eruption of natural gas and pipeline fluid that lasted for 2.5 hours. The pipeline fluid that was released into the ambient air contained approximately 1,500 ppm of polychlorinated biphenyl (PCBs), and a PCB-spill was reported to EPA. Emergency response activities included cleanup of visually impacted soils and surfaces, evacuation of impacted residents, and the collection of soil, wipe and vegetation samples (*e.g.*, pine needles) for PCB analysis. While the PCB concentrations reported in all samples were very low (< 10 ppm) and in most, PCBs were not detectable, the event generated a high level of concern among impacted residents regarding the potential for long-term health effects and the impact on property value. As a result, a follow-up investigation was conducted that included extensive sampling of potentially impacted media, air dispersion and deposition modeling and a community interaction campaign to assess potential risk and communicate the science being used to assess and mitigate the situation. The second sampling program measured no detectable levels of PCBs (<0.1 ppm) in the vicinity of the release, and the results of the analysis were communicated to the residents in lay terms. The follow-up investigation brought to light several unexpected issues regarding the initial sampling and community interaction. Lessons learned from this project include improved emergency response actions, which could have alleviated much of the residents concern. Improvements in control of the scene immediately following the event, soil sampling strategies, and analytical techniques were recognized as critical. Secondly, methods of communicating scientific concepts including PCB toxicology, exposure and risk assessment to the public were improved as well as methods for communicating the results of laboratory analyses.

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