



Ontario Moves to Limit the Risk of Explosions from Installing Geothermal Systems

By *Marc McAree**

On April 20, 2012, a contractor drilling a borehole for a geothermal system outside an Oakville client's home struck a pocket of pressurized natural gas 120 metres below the surface. Unfortunately, nobody noticed the release of the colourless, odourless gas for several days until a gas alarm went off in the basement of neighbour's home 100 metres away. The local gas utility discovered high levels of the flammable gas both inside and outside the home and were able to eliminate the risk with proper ventilation.

Although disaster was averted, the event triggered a call by fire officials and local politicians for a moratorium on the installation of vertical closed loop geothermal systems. In response, Ontario moved quickly to revoke and replace O. Reg. 177/98 (Ground Source Heat Pumps) under the *Environmental Protection Act* with a new regulation that requires installers to monitor for gas and be prepared to take effective action in the event of a release. According to the Canadian GeoExchange Coalition (CGC), the government has overreacted and should immediately repeal the new regulation.¹

Under the new regulation – O.Reg. 98/12 (Ground Source Heat Pumps), filed May 18, 2012 – anyone constructing a new (or altering, replacing or extending an existing) vertical closed loop geothermal system that extends more than five metres below the surface must obtain an Environmental Compliance Approval (ECA) from the Ministry of the Environment. These systems (except for those using methanol as a heat-transfer fluid) had previously not required MOE approval. ECAs are Class II instruments under the *Environmental Bill of Rights, 1993*,² and are subject to a minimum 30-day posting on the Environmental Registry.

As part of an ECA application, the installer is required to submit a work plan prepared by a licenced engineering practitioner or a professional geoscientist. This plan must include measures to be taken if hazardous gas is encountered. The approval requirements in the new regulation do not apply to horizontal geothermal systems and open loop systems, which are not installed deep enough to encounter natural gas. Open loop systems, however, are regulated by Regulation 903 (Wells) and the *Ontario Water Resources Act*, and also require a sewage works ECA.

Over the next few months, the Ministry of the Environment intends to increase inspections and implement other measures to ensure effective oversight of both open and closed loop geothermal systems. It will also review the qualifications and requirements for the licensing of geothermal installers. Any future regulation will be posted for public consultation.

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¹ http://www.geo-exchange.ca/en/UserAttachments/news530_PR%20001-06-2012_E%20Regulation%2098.pdf.

² S.O. 1993, c. 28, and O. Reg. 681/94 (Classification of Proposals for Instruments), s. 5(2).