

REAL ESTATE & DEVELOPMENT

Bay State moves to address perchlorate contamination

Massachusetts is moving forward with setting cleanup and drinking water standards for perchlorate. The impact of these soon-to-be proposed regulations and the potential liability may be significant and affect many land-owners.



INSIDER VIEW

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In Massachusetts, perchlorate was first identified in 2000 at the Massachusetts Military Reservation on Cape Cod, apparently resulting from military explosives. In 2004, the state Department of Environ-

mental Protection required public water suppliers to conduct extensive testing for perchlorate, which established that perchlorate had contaminated nine public drinking-water supplies located across the state. The DEP has identified the likely source of the contamination as blasting in three cases and as fireworks displays in three other cases.

Perchlorate is a part of a chemical, consisting of one chlorine atom and four oxygen atoms that become separated when the chemical is dissolved in water. Once separated, perchlorate is persistent and highly mobile in the aqueous environment.

Perchlorate derives from perchlorate salts (ammonium, potassium, magnesium or sodium perchlorate) and perchloric acid. Ammonium perchlorate, an explosive, is an ingredient in rocket fuel, missiles, fireworks and blasting materials. Other perchlorate salts and perchloric acid are used in electronic tubes, lubricating oils, finishing leather, electroplating and in the manufacture of paints and enamels.

Current scientific information suggests that there may be a link between human exposure to perchlorate and harm. In particular, ingestion of perchlorate at sufficient levels may interfere with the uptake of iodine by the thyroid gland, potentially interfering with proper development of fetuses and young children, as well as the metabolism of adults. The debate continues as to how much perchlorate is acceptable.

There is no national drinking-water standard for perchlorate. In 2002, EPA issued a draft risk assessment on perchlorate, which suggested a reference dose that converts to 1 part per billion in drinking water, a level below then-available detection limits. Various governmental agencies then requested a review of this study by the National Academy of Sciences. The 2005 NAS study criticized the EPA study, indicating that existing epidemiological and clinical studies do not support a clear link between exposure and adverse health impacts. NAS suggested a

reference dose that converts to 24.5 parts per billion in drinking water, which it felt would protect even the most sensitive populations, and recommended further study. In response, the EPA adopted the NAS recommended reference dose in February 2005. However, it may be some time before EPA establishes a drinking water standard for perchlorate.

In the near future, the DEP is expected to issue a coordinated cleanup and drinking-water standard for perchlorate, and is not expected to vary from the 1 part per billion cleanup standard it proposed last year.

Blasting, fireworks displays and certain industrial uses may have been contaminating the Massachusetts landscape with perchlorate for decades without notice. The DEP studies suggest that perchlorate contamination is widespread. Scientific studies suggest that perchlorate may potentially cause harm to humans.

These facts are striking and suggest that many property owners, redevelopers and blasting companies may face litigation over liability for cleanup and possibly for harm to people who have been exposed to perchlorate.

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