

## **Subdivision & Petroleum Don't Mix**

By George Seel, Bureau of Remediation & Waste Mgmt.

Below is an informational letter being mailed to municipal planning board chairs regarding an issue that increasingly faces the Department of Environmental Protection's petroleum remediation program – new development, most often residential subdivisions, encroaching into areas of contaminated ground water or onto likely sources of ground water contamination. This educational letter is also going to code enforcement officers, since in our experience, they are the only “staff” to rural planning boards. The most recent example is a new subdivision constructed abutting and downgradient of a salt pile/fleet fueling facility in southern Maine with the end result that the first new homes in this subdivision have drinking water contaminated with both gasoline and chlorides. We expect more homes may as well as more lots are developed. Of course, this problem has not been restricted to ground water contaminated by oil, but also other sources like hazardous waste and solid waste landfills as well.

The Bureau of Remediation's interest is two-fold. The first is the public health risk from the resulting exposure to petroleum constituents or to other hazardous materials. The second is money. The State funds most petroleum clean ups from underground and aboveground tank facilities. We have had a number of cases where we have had to do a second clean up of a facility because new receptors (e.g. new homes, wells, etc.) have been developed next door. Having to do multiple clean ups of a site is costly, especially when funding is limited and projects need to be triaged. Funding to address hazardous waste contaminated wells is even scarcer.

As professional, municipal land use planners, your assistance in educating your local land use decision-makers and ensuring ground water quality is considered when permitting subdivisions or similar developments relying on ground water for drinking water would benefit home owners, the municipality and the Department.

Dear Town Planning Board Chair or Code Enforcement Officer,

Periodically, the Maine Department of Environmental Protection is required to respond to a citizen complaint that the drinking water well for their new home is contaminated with petroleum. Upon investigation, it is not uncommon to find the impacted well and home are part of a new residential subdivision approved by the municipality, and located in close proximity to a petroleum storage facility or the site of an oil spill. Often a number of wells are ultimately found contaminated. The sources of such contamination are commonly active or former locations of underground or above ground oil storage tanks, including gasoline retail facilities, bulk oil storage facilities, and business and fleet fueling facilities. Based on our experience investigating and cleaning up these types of facilities, we have learned that regardless of how well they were operated; there almost always is some groundwater contamination. It is only a question of its severity and how widespread it is. If gasoline contamination reaches the underlying bedrock aquifer, certain harmful chemicals in gasoline can travel well over 1000 feet in the fractures. Problems arise when wells are drilled into the contaminated ground water in the same bedrock aquifer.

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## **Subdivision & Petroleum Don't Mix *Cont.***

What can municipal planning boards do to minimize the risk of approving subdivisions in locations where healthy, potable drinking water is not available because of petroleum contaminated groundwater? We suggest you consider in your permitting decision, ground water contamination risks found in close proximity to the proposed subdivision. The Department has developed a user-friendly online mapping application based on Google Earth showing locations of reported oil spills and oil storage facilities and other likely sources of groundwater contamination (e.g. solid waste landfills, hazardous waste spills, junkyards, salt piles, etc.). This tool can be used when reviewing subdivision applications to determine if spills or oil storage facilities are (were) located on abutting parcels, and if it is appropriate to have the subdivision applicant demonstrate as part of the municipal subdivision approval process that the residents of the subdivision, upon drilling their wells, are likely to find potable drinking water. A number of similar tools are available at the Department's website at <http://www.maine.gov/dep/gis/datamaps/>. Of particular use as a screening tool is an application entitled "Site Types (Threats to Groundwater and Environmental Monitoring)".

When subdivisions are located on contaminated ground water, it is usually the homeowner, the municipality and the Department that bear the economic costs of such situations. These costs are in the form of reduced property values, water treatment costs, extending public water service and clean up costs.

We hope you will take advantage of these tools and the ground water quality data presented there in map form. If you have questions on the use of our Google Earth tools, please do not hesitate to call for assistance. Any number of Department staff can assist you. Call (207) 287-2651 and ask for David McCaskill, Butch Bowie, or Peter Moulton.

Sincerely,

George Seel, Director  
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Bureau of Remediation & Waste Mgmt.

 **Gorrill-Palmer  
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  **Maine State Planning Office**