

**CGA Energy and Technology Committee  
Public Hearing March 7, 2013  
HB 6533 An Act Concerning Hydraulic Fracturing  
Comments Submitted by Carolyn Bayne, Water Resources Specialist**

**Senator Bob Duff, Representative Lonnie Reed and Members of the Energy and Technology Committee:**

The League of Women Voters of Connecticut appreciates the opportunity to comment today on HB 6533.

The League supports this bill, which will define hydraulic fracturing and hydraulic fracturing waste and which will prohibit the treatment, discharge, disposal or storage of hydraulic fracturing waste in the state of Connecticut. We do, however, have concerns that the bill does not go further to enact a moratorium on hydraulic fracturing in Connecticut as was done in Vermont in May 2012.

At present, the issue of hydraulic fracturing waste (“wastewater”) is a critical one for Connecticut. Several of our neighboring states sit atop the Marcellus Shale Deposit, considered one of the largest fields of natural gas in the world. Some of those states currently have many active wells whose volume of drilling threatens to overwhelm existing waste-handling infrastructure. Pennsylvania, for example, has approximately 6,000 active wells and permits for some 3,000 more; in 2011, those wells generated 20 million 42-gallon barrels of wastewater. It is not necessary to do the math to understand the magnitude of the problem.

The process of hydraulic fracturing requires that large volumes of fluids (water, sand, chemicals) be pumped at high pressure 3-15,000 feet below ground into shale formations. Pockets of natural gas are released that are then pumped to the surface. The wastewater that results from natural gas extraction is a combination of water, leftover chemicals, salts, and small amounts of naturally occurring radioactive materials and heavy metals picked up underground.

These contaminants make disposal of this wastewater treatment difficult and expensive. Options include transporting the wastewater to

- 1) Class II underground injection wells;
- 2) special wastewater treatment facilities, where it is subsequently discharged into surface water.

Underground injection wells can leak and cause groundwater contamination, as they often cross natural aquifers and water tables. The risk with treatment facilities is that the wastewater will not be properly treated before it is released. The problem is compounded because many states, including Pennsylvania, do not require companies to disclose the chemical mixes used in the process of hydraulic fracturing. Most wastewater treatment facilities are not designed to handle wastewater with high concentrations of salts or radioactivity that is two to three

times the federal drinking water standards. As a result, radioactivity and chemicals that are known or possible human carcinogens are not properly removed and can potentially seep into drinking water sources.

In a study published in the journal Risk Analysis, "Water Pollution Risk Associated with Natural Gas Extraction from the Marcellus Shale" (August 2012), scientists at Stony Brook University examined several pathways associated with this process that could lead to water pollution. They included spillage from a tanker truck going to or from a well site; well casing leaks into groundwater; leaks through fractured rock into drinking water; surface spills at drilling sites caused either by improper handling of fluids, or leaks from storage tanks or holding ponds; and wastewater disposal. Using probability bounds analysis, they determined that the disposal of wastewater from hydraulic fracturing is one of the largest potential risks for water pollution; in fact, it was *several orders of magnitude* larger than risks posed by the other potential pathways.

Consequently, the League strongly supports this legislation that would prohibit the treatment, discharge, disposal or storage of hydraulic fracturing waste in Connecticut. However, we maintain the importance of a moratorium on hydraulic fracturing until further study can be done on all issues related to it. With its vast reserves, the focus is understandably on the Marcellus Shale, but a United States Geological Study has identified potential natural gas reserves in the Hartford Basin, which runs from just south of the Vermont border to the Connecticut shoreline. Although the reserves are probably too small and scattered and of questionable quality to merit further exploration at this time, technology advances so quickly that it is best to take precautions and enact a moratorium now.

As with many industries, there are significant trade-offs and environmental impacts with hydraulic fracturing. It does, in fact, create jobs and increased energy independence. It also disrupts landscapes, uses vast quantities of an essential natural resource (water), and creates significant amounts of wastewater that is difficult and expensive to properly dispose of. It is the position of the League of Women Voters of Connecticut that the increased amounts of natural gas obtainable through current practices of hydraulic fracturing are not worth the risk to drinking water supplies.

Thank you for your consideration of our input on this important piece of legislation.

