

Geothermal Well Installations for Heating and Cooling in Massachusetts: Why Hydrogeological and Aquifer Chemistry Considerations Matter

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Prior to 2007, the year before oil reached \$100 per barrel for the 1st time in history, MassDEP processed less than ten Underground Injection Control (UIC) registration applications per year for geothermal well installations. That number quickly increased to multiple hundreds per year. Because MassDEP's UIC regulations require that all types of geothermal well installations must have a MassDEP approved UIC registration, the UIC registration program has probably obtained a greater knowledge of geothermal well installation practices and problems encountered in Massachusetts (MA) than any other MA state program or agency. This presentation will provide a discussion of the types of geothermal systems that are typically installed in MA and how differences in regional hydrogeological conditions dictate the types of wells that are most commonly installed in one region vs. another. Next we will discuss recurring problems with geothermal wells that have occurred in MA based upon site-specific and regional-specific hydrogeological and aquifer chemistry conditions.