

## How Far Should Wellhead Protection Extend?

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I decided to write this article because there are some serious misconceptions over how far wellhead protection should extend. Wellhead protection is properly defined as protecting the entire area surrounding a well where contaminants are reasonably likely to move toward

and reach the water well. However, here in New York State, many believe that wellhead protection simply refers to the 200-foot radius protective buffer that the NYSDOH and NYSDEC typically require for water supply wells. This area is the minimum area that New York State says should be owned and/or controlled by the water supplier. The 200-foot buffer is an unwritten guideline that has been used by regulators over the years. It is not based upon any statutory or regulatory reference that I have been able to locate. Nor is it based upon hydrogeology.

Sometimes when I ask water systems if they have a wellhead protection plan, they will state that they do. When I ask them for details, they commonly tell me that they have purchased land around their well as required by the state. The problem is, the 200-foot protective buffer is not based upon

groundwater flow rates, potential contaminant sources, etc. Wellhead protection efforts such as public education, regulations, best management practices, etc. must extend beyond 200 feet around the well to be effective. A wellhead protection plan must incorporate the entire critical area that supplies groundwater to the supply well.

I have worked with three water systems with sand and gravel wells that have had detections of volatile organic compounds. The sources of these contaminants have been identified based upon detailed site investigations. In these three examples, the distance from the water supply well to the source of the volatile organic contamination ranges from 250 to 1,900 feet and averages 983 feet. The water system on each occasion owned a 200-foot buffer around its water wells. Contamination still occurred. In each situation, the water supply wells predated the contaminant sources. Proper wellhead protection taking account the entire area that supplied groundwater to the wells could have theoretically prevented the contamination from occurring.

So, the next time I ask you if your system has a wellhead protection plan, I hope that you will think beyond the 200-foot circle! Call me at 1-888-NYRURAL ext. 17 or email me at [Winkley@nyruralwater.org](mailto:Winkley@nyruralwater.org) if you have questions. 💧