Source Water Protection

Assessment of Your Wellhead Protection Delineation Method

DOH 331-636, 7/2019

Washington State Department of Health

This general guide will help you assess the risks associated with using a Calculated Fixed Radius (CFR) method to determine the boundaries of—or delineating—your wellhead protection area. Since each water system is unique, please consult DOH's source water protection staff for a more thorough assessment of the risks posed by your current delineation method.

Well Production	Specific Capacity	Susceptibility	Land Use	Total Points	Assessment
Your well's annual production can be measured in millions of gallons per year (mg/y). If you do not know your well's annual production, you can estimate it using the number of Equivalent Residential Units (ERUs).	Your well's "specific capacity" is the quantity of water your well can produce per unit of drawdown (expressed in gallons per minute/feet, or gpm/ft).	Your well's source susceptibility (**doh.wa.gov/SWAPmaps**) is intended to determine the likeliness of contamination. It is based on the determination of your well's physical characteristics (construction and source type) and historical samples.*	The land uses surrounding your well can impact its risk of contamination. If there are multiple types of land uses surrounding your well, please choose the highest rated one.	Add up your total points for your (a) well production, (b) specific capacity, and (c) susceptibility; and (d) land use. Points _____	Below is a general assessment of whether using a Calculated Fixed Radius (CFR) to delineate your wellhead protection area puts your water source at greater risk of contamination.
High Over 110 mg/y (or over 750 ERUs) **3 points**	**High** Greater than 2 gpm/ft **3 points**	**High** See DOH rating **3 points**	**High** Industrial/manufacturing, mining, urban mixed use, and business/ commercial with high risks (i.e. dry cleaner, junk yard, underground tanks.) **3 points**	**9-12 Total Points** There is a greater need for accuracy about the boundaries of your wellhead protection area.	Using a CFR method puts your water supply at high risk of contamination. Strongly consider using hydrogeologic mapping or numerical modeling instead to avoid protecting areas that may reduce economic growth.
Medium Between 26 and 109 mg/y (or from 180 to 750 ERUs) **2 points**	**Medium** Between 1 and 2 gpm/ft **2 points**	**Medium** See DOH rating **2 points**	**Medium** Agricultural, business/commercial without high risk uses, transportation, urban or suburban (non-sewered), and suburban mixed use. **2 points**	**7-8 Total Points** There is a need for accuracy about the boundaries of your wellhead protection area.	Using a CFR method might put your water supply at moderate risk of contamination. Consider using analytical modeling or hydrogeologic mapping instead.
Low Under 26 mg/y (or under 180 ERUs) **1 point**	**Low** Under 1 gpm/ft **1 point**	**Low** See DOH rating **1 point**	**Low** Urban or suburban residential (sewered), rural residential, forest, undeveloped, open space, and wetlands **1 point**	**4-6 Total Points** There is lesser need for accuracy about the boundaries of your wellhead protection area.	Using a CFR method might put your water supply at lower risk of contamination. Perhaps consider using a more advanced method instead, such as analytical modeling.

Note: To use DOH's Source Water Assessment Program (SWAP) Mapping Application, enable Adobe Flash and click on the binoculars icon to search. Then choose "Time of Travel—All Group A" for the search layer; then enter either your system ID or system name. The results will include the "Source Susceptibility" at the bottom of the list.

*Criteria evaluated by DOH include: source type, well depth and open interval, whether the well has an adequate surface seal, does the well have artesian flow, is a well log available, is the aquifer confined, and certain water quality parameters such as nitrate, VOCs, and SOCs.

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