Drinking water and irrigation — there's a connection

By Ann Soule

Editor's note — May 2 - 9 is National Drinking Water Week. The Clallam County Water Quality Program, Environmental Health Division, and the Dungeness-Quilcene Water Resources Pilot Planning Project are co-sponsoring programs in area schools and an open house on May 6 to help residents understand the connection between surface water and that mysterious resource we all depend upon so much — groundwater. Ann Soule heads up the County's Sequim-Dungeness Groundwater Protection Project.

Hopefully no one is drinking untreated water from irrigation ditches anymore, so what is the connection? As many of you with shallow wells may know, the connection can be pretty strong. Dungeness River water, flowing through over 100 miles of irrigation ditches, filters down into groundwater throughout the Sequim-Dungeness Valley. Some of that groundwater may be feeding your well, and pumped into your house for drinking.

Whether this is true in every case depends on a few important factors. Of course, your well must be reasonably close, within one-eight mile of so, to an irrigation ditch, stream or the river. Just as important as distance is the physical nature of the soil and underlying strata between your well and the ditch. Obviously, water percolates through coarse sand and gravel very quickly; it takes a lot more time to percolate through loamy silt or clay. Therefore, the degree to which a ditch "leaks" water out the bottom depends on the underlying strata. And the amount of water in your well that came out of a ditch depends on whether the strata in between is coarse or fine.

The Sequim Prairie is composed of many interbedded layers of clay, silt, sand, and gravel. These layers were laid down by glaciers tens of thousands of years ago. This complex glacial geology makes it difficult to know for sure how water moves into and through the groundwater system in the Sequim-Dungeness area. We know that there are areas where the soil drains water very readily, "recharging" the shallow groundwater system, such as around Sequim and parts of Carlsborg. These are called high aquifer recharge areas. The opposite of this is where water tends to pond on the surface or run off after a rain, such as along Atterberry Road. These are low aquifer recharge areas.

If you live in a high aquifer recharge area, pollutants and contaminants such as auto maintenance wastes, excess lawn fertilizers, or those caused by failing septic systems have a greater chance of entering your well water. On the other hand, fine-grained soils are beneficial since they "filter out" some contaminants introduced on the ground surface, before they reach the aquifer. Remember, regardless of the soil on your property, if you have a private well it is recommended that you have your water tested .

These days, most well drillers drill deep enough to penetrate through a layer of fine-grained sediment before they finish a well. This is a good practice for several reasons. First, the deeper the well the less it is dependent on recharge from an irrigation ditch, stream, or river. The water in deeper zones mostly comes from upgradient recharge areas, possibly as high as the foothills or the Olympics. Also, fine-grained layers provide some natural protection for your drinking water source from many contaminants.

The amount of leakage from the irrigation ditch system depends on the recharge capacity of the underlying strata, the soil in the bed of the ditch, and the amount of water flowing in the ditch. It is very difficult to estimate the actual amount of water which leaks out of the ditch system as a whole. A project sponsored by the Dungeness-Quilcene Water Resources Pilot Planning Project, in cooperation with the Irrigation Water Users Association and Clallam County Water Quality Program, is currently underway to measure leakage in select stretches of irrigation ditch. A brochure covering the basics of well construction and groundwater protection is being developed and will be available from the Clallam County Water Quality Program this summer.

In the meantime, those wishing to learn more about wells, groundwater, and the water we drink in the Sequim-Dungeness area are urged to attend a Groundwater Open House, Thursday, May 6, 6 - 9 p.m. at the Sequim Community Center. Or call Ann Soule at 452-7831, ext. 424.