

NON-POINT SOURCE POLLUTION IN DRINKING WATER

What Is Non-Point Source Pollution?

Non-point source pollution (NPS) is when a specific pollutant source cannot be determined. There are four ways that pollution can enter ground water: through ground absorption, solubility, volatility, and molecular size. Absorption is when liquid seeps through the soil, solubility is the ability of a substance/pollutant to dissolve in the soil, and volatility refers to its tendency to change from a liquid or a solid into a gas. The smaller the molecule, the more likely it will be able to travel between soil particles.

HOW NPS POLLUTION CAN CONTAMINANT YOUR DRINKING WELL

There are many Non-Point Source (NPS) contaminants such as chemical spills (detergents, paints, motor oil, etc.). Spills can get into drinking water by seeping into the ground water just like rain does. Other contaminants are leaking sewer lines/tanks, pesticides, animal waste, iron, arsenic, and fertilizers.

HOW YOU CAN CONTROL NPS POLLUTION

There are very easy ways to control these contaminants such as cleaning up chemical spills by not hosing them into the street. To prevent leaking sewer lines/tanks, have them checked and pumped, a minimum of three to five years. Controlling pesticides is very simple just dispose of containers in a state approved manner. After empty, rinse the container properly for disposal and recycling. Never reuse a pesticides container. Be sure to wear protective clothing when rinsing a pesticide container.

WHAT QVIR IS DOING TO MONITOR DRINKING WELL WATER

Quartz Valley Indian Reservation Environmental Department conducts well water sampling every two weeks. The wells are checked for e-coli and coliform bacteria. Total Coliform bacteria is an indicator for other bacteria such as E-coli. If there are signs of bacteria, we resample and then shock chlorinate the well. The Tribal Environmental Department follows a strict no E.coli rule, if the re-sample comes back positive for bacteria the drinking well will be treated. If your well tests positive you will be notified by our department & a report will be sent to the housing authority. Our Department has treated (shock

chlorinated) 1 drinking well on the reservation so far this year.

Chlorination vs. Ultra-Violet Treatment

There are two options for treating the E.coli & Total Coliform bacteria they are:
Chlorination: Chlorine kills disease-causing organisms. The advantages of chlorination are that 1) It is more cost-effective than UV treatment 2) It is reliable and effective against a wide spectrum of pathogenic organisms 3) Chlorination has a flexible dosing time and 4) The leftover chlorine will prolong the next treatment.

Ultra-Violet: UV light renders bacteria harmless by scrambling its DNA with radiation. Low dosage may not effectively inactivate some viruses, spores, and cysts. Turbidity and total suspended solids (TSS) in the wastewater can render UV disinfection ineffective. UV treatment is not as cost-effective as chlorination. Interesting Fact: Forest fires harm water bodies making it change the taste of water, increases the growth of bacteria, and creates pathogens in the water.

If you would like more information regarding NPS pollution within the Klamath watershed you may contact QVIR EPA @ (530)468-5907.



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