

SUGGESTED WATER QUALITY TESTING FOR HOMEOWNER WELLS

STATE, TOWN AND LENDER REQUIREMENTS

There is no state requirement for testing the water quality of private wells. Accordingly, the information in this document is offered only for educational purposes. Since there are no state water quality testing requirements, a few towns, primarily in southern New Hampshire, have identified a list of required test parameters. This requirement is typically expressed as the obligation to test for certain factors but not necessarily to meet them. This testing is typically associated with the building code function known as a "certificate of occupancy" (CO). Please check with your town to see if water quality testing is required and under what circumstances. The Veteran's Administration (VA), Federal Housing Administration (FHA) and many mortgage lenders require some water quality testing when writing a mortgage. The requirements among these lenders are not consistent. For this reason, we suggest you contact the specific lender to identify the specific water quality test they require.

LIST OF SUGGESTED CONTAMINANTS

The list of contaminants below has been prepared by the Department of Environmental Services (DES) Drinking Water Groundwater Bureau after a review of the extensive records of DES's public water supply program. This is not an exhaustive list, but provides a reasonable balance between the high cost of testing for all contaminants required by the Safe Drinking Water Act and those contaminants more commonly found in New Hampshire.

This list of recommended testing parameters has been coded separately for bedrock (drilled/artesian) wells and dug wells (those excavated into sand and gravel). Arsenic, radon gas and gross alpha are typically seen at elevated concentrations only in bedrock wells and thus are not specifically suggested for sand and gravel type wells.

Recommended Testing for Bedrock Wells: Bacteria, nitrate, nitrite, chloride, sodium, iron, manganese, pH, hardness, fluoride, arsenic, lead, copper, radon and analytical gross alpha.

Recommended Testing for Dug Wells: Bacteria, nitrate, nitrite, chloride, sodium, iron, manganese, pH, hardness, fluoride, lead and copper.

All of the parameters listed for a dug well are contained in the "Standard Analysis" package.

ADDITIONAL TESTING BASED ON THE ANALYSIS OF THE WELL'S LOCATION OR THE RESULTS OF THE FIRST ROUND OF WATER QUALITY TESTING

Organics Testing – Most contaminants in the organics group come from manmade sources. In general, testing for organics is not necessary unless an individual site review of the area near and uphill of your well identifies past or present land use that would make such contamination possible. A few examples of these activities might include: heavy industrial or commercial activity, past or present landfills and intense farming. Some important factors in judging whether organics testing may be necessary include:

- Elevated nitrate/nitrite concentration. This may indicate past agricultural activity where pesticides and/or herbicides were also used.
- Unusual taste and odor in the water supply, particularly if characterized as "strange or unusual", however not including hydrogen sulfide.
- Past or present industrial land uses nearby or uphill of your well.
- State and local records which identify hazardous waste sites and other contamination areas nearby or upstream of your well.

FREQUENCY OF TESTING

Water quality in wells is normally stable and, if a change is going to occur, it occurs very slowly. Thus the interval between water quality samples taken from a properly constructed well, located in a safe area, can generally be in terms of years. Other than for bacteria, which should be tested on an annual basis, DES recommends that a bedrock well be tested for the "Standard Analysis" plus the mineral radionuclide parameters every 3-5 years. The same recommendation is made for a dug well with the exception of the mineral radioactivity parameters. These frequencies are appropriate for wells in rural areas believed to be free of groundwater contamination sites.

There are a variety of conditions which would prompt modifications of these average monitoring frequencies. Some include:

Areas of Higher Contaminant Possibility. In more built-up areas and those with known groundwater contamination, increased sampling frequency for some parameters is warranted. In these situations the frequency would be determined individually based on an assessment of the well type, contaminant type and level of health risk.

Proper Well Construction. DES recommends that wells not be sampled unless their construction is excellent. Proper well construction is detailed in facts sheets which are provided by the agency. DES recommends taking a bacterial test after any well repair and after every pump or plumbing modification but only after disinfection and substantial flushing to clean the well has been completed.

Sampling Timing and Location. Where treatment is already installed, DES recommends that the sample be taken of the treated water just before the treatment system is scheduled to be rejuvenated. Where you desire to have a record of the ambient quality of your well water, additional testing should be done of the "raw" water. Such raw water testing provides a historical and official record of your well's quality. This historical data is often valuable when contending that contamination of your well has occurred by the recent activities of others.

Higher Concentrations. Where any health parameter is greater than 50 percent of the public drinking water maximum contaminant level (MCL), more frequent sampling should be performed until one can reasonably conclude that the concentration of that contaminant is reliably and consistently below the MCL. Where the contaminant level in your well is unstable or unknown, more frequent testing is warranted. This testing frequency would be individually determined based on the specifics of the area and the contaminant risk.

Variation in Quality. Where the water quality in a supply varies after a heavy rain or when you have experienced a rapid and unexplained substantial change in quality from the past long term performance of that well, DES suggests thorough investigation to find and fix the problem followed by weekly or monthly sampling for bacteria, and possibly for other parameters, until the condition stabilizes.

FOR MORE INFORMATION

For more information concerning water quality testing of private wells, please call the DES Drinking Water Groundwater Bureau at 271-2513. Drinking water fact sheets are available through the DES web site at:

<http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm>