

Drinking Water: What Tests Do I Need?

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Photo Courtesy of Lisa Galloway-Evrard

What Tests Do I Need? *Municipal Water Supply*

If your water is supplied via a municipal water system, whether public or privately owned, it is regularly tested for the contaminants regulated by the federal and state drinking water standards by the drinking water supplier. All public community water systems and non-community water systems must test their water on a rigid schedule and at specific locations. Public community water systems include municipal water supplies and private water companies. Non-transient non-community water systems, such as schools, factories, office buildings, industrial parks, etc., test for all regulated contaminants except for radionuclides and disinfection by-products. Highway rest stops, restaurants, motels, parks, etc. (i.e., transient non-community water systems) test for coliform bacteria, nitrates, and nitrites. If the levels of any contaminant exceeds the drinking water standards, the drinking water supplier is required to notify the customers. These notifications may include public postings, the news media, and mailings to individual customers. The drinking water supplier is then required to eliminate the problem by either improving water treatment or by changing to a contaminant free source.

What Tests Do I Need? *The Private Well Testing Act*

Beginning September 14, 2002, the Private Well Testing Act (signed into law on March 23, 2001) requires that certain types of private drinking water wells be tested for contaminants as a condition of each contract for sale of real property. More specifically, the Act covers the sale

of any property that gets its drinking water from a private well located on the property and the sale of any property that gets its drinking water from a well that has less than 15 service connections or that does not regularly serve an average of at least 25 people daily at least 60 days out of each year. Also, the Act covers the rental of any property that gets its drinking water from a private well that is not required to be tested under any other State law. Landlords have until March 14, 2004 to complete the required testing. The results of the tests must be reviewed by both the buyer and the seller, or in the case of a rental, by the renter. If contamination is found in the well water, the buyer and seller or landlord and tenant can negotiate a remedy if wanted. The law does not require that any action be taken.

Under this new law, well water must be tested for total coliform, nitrates, iron, manganese, pH, lead, and all volatile organic chemicals (VOCs) for which maximum contaminant levels (MCLs) have been established by state regulations. Testing for arsenic must be done in the 10 northern and central counties considered at high risk, and testing for mercury must be done in nine southern and shore counties. Gross alpha particle activity, including radium, testing will be phased in 12 counties over an 18 month time frame. See Table 1 below. Only a state certified laboratory can collect the samples and perform the tests required under the Private Well Testing Act. The NJDEP estimates the average cost to conduct these tests at approximately \$450 to \$650 depending on the laboratory and location. For a list of New Jersey certified water testing laboratories by county, request the Fact Sheet "Where to Get Your Drinking Water Tested in New Jersey." You should contact the laboratory beforehand for sampling instructions and to obtain the necessary



sampling containers. In addition, there are out-of-state laboratories which are certified for water testing in New Jersey.

IMPORTANT: *Laboratories gain or lose state certification on an almost daily basis. To ensure that a laboratory is currently certified for testing in a particular category, please call NJDEP, Office of Quality Assurance, at (609) 292-3950.*

What Tests Do I Need? *Existing Home Wells*

Currently there are no state regulations that require routine testing of private wells. If you get your drinking water from a private well, you are responsible for its quality, as well as the cost of testing. Testing should only be conducted by a state certified laboratory. Most local, county, and state

health departments in New Jersey will not test water from private wells unless there is a public health concern. The NJDEP recommends that as an absolute minimum, bacteriological testing should be conducted annually. Unusual episodes of diarrhea, especially among visitors to the home, warrants more frequent bacteriological testing. Testing for lead and nitrate are also recommended. In southern New Jersey, private well owners should also consider testing for mercury and gross alpha particle activity, as recommended by NJDEP. See Table 2 for a summary list of recommended tests for existing home wells. Additional testing is warranted if the home is located in a heavily industrialized area, near service stations, machine shops, dry cleaners, a hazardous waste source, a landfill, or if nearby houses have reported problems or if your water has an unusual taste, odor, or color (See Table 3). Local health officials can advise you on which tests should be performed based on their record of local water quality problems.

TABLE 1. Required Water Tests under the Private Well Testing Act

BACTERIA (Total Coliform) ¹	VOLATILE ORGANIC CHEMICAL SCAN ²
NITRATE	LEAD
IRON	MERCURY ³
MANGANESE	ARSENIC ⁴
pH	RADIOACTIVITY (Gross Alpha) ⁵

- ¹ If the samples tests positive for total coliform bacteria, the sample shall be analyzed for either fecal coliform or *E. coli*
- ² All volatile organic compounds for which maximum contaminant levels (MCLs) have been established under the Safe Drinking Water Act, NJSA 58:12A-1 et seq., and implementing rules, NJAC 7:10
- ³ Water samples collected from Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Monmouth, Ocean and Salem County shall be analyzed for mercury.
- ⁴ Water samples collected from Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Morris, Passaic, Somerset, and Union County shall be analyzed for arsenic
- ⁵ Water samples collected from Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Mercer, Middlesex, Monmouth, Ocean, and Salem County locations shall be tested for gross alpha particle activity. For Cumberland and Gloucester Counties, testing for radioactivity is required starting March 15, 2003. For Atlantic, Burlington, Camden, and Salem Counties, testing for radioactivity is required starting September 16, 2003. For Cape May, Hunterdon, Mercer, Middlesex, Monmouth and Ocean Counties, testing for radioactivity is required starting March 16, 2004

TABLE 2. Recommended Water Tests for Existing Home Wells (Non-Public Water Systems)

<i>Recommended</i>	<i>Consider</i>	
BACTERIA (Total Coliform)	HARDNESS (Total)	CORROSIVITY
NITRATE	IRON	MERCURY
LEAD	MANGANESE	SODIUM
	pH	RADON-222
	RADIOACTIVITY (Gross Alpha)	
	VOLATILE ORGANIC CHEMICAL SCAN	

Problem	Common Signs/Situations	Causes	Test Recommended
“Hard” water	Large amount of soap required to form suds, insoluble soap curd on dishes and fabrics, hard scaly deposit in pipes and water heaters	Calcium, magnesium, manganese, and iron (may be in the form of bicarbonates, carbonates, sulfates or chlorides)	Hardness Test
Rusty colored water	Rust stains on clothing and porcelain plumbing fixtures, metallic taste to water, rust coating in toilet tank, faucet water turns rust colored after exposure to air	Iron or manganese, or iron bacteria	Iron Test, Manganese Test
“Rotten egg” odor	Iron, steel, or copper parts of pumps, pipes, and fixtures corroded, fine black particles in water (commonly called black water), silverware turns black	Hydrogen sulfide gas, sulfate-reducing bacteria, or sulfur bacteria	Hydrogen Sulfide Test
“Acid” water	Metal parts on pump, piping, tank, and fixtures corroded, red stains from corrosion of galvanized pipe, blue-green stains from corrosion of copper or brass	Carbon dioxide, in rare instances, mineral acid, sulfuric, nitric, or hydrochloric	pH, Langelier Index
Cloudy turbid water	Dirty or muddy appearance	Silt, sediment, microorganisms	Check well construction with local well driller
Chemical odor of gasoline, fuel oil	Well near abandoned fuel oil tank; gas station	Leaking underground storage tank	Volatile Organic Chemical Scan or specific fuel component
Unusual chemical odor	Well near dump, junkyard, landfill, industry, or dry cleaner	Groundwater contamination, underground injection, or leaching waste site	Check with Health Department, Organic chemical scan, heavy metals
No obvious problem	Well located in area of intensive agricultural use	Long-term use of pesticides and fertilizers	Test for pesticides used in area, nitrate test
Recurrent gastrointestinal illness	Recurrent gastrointestinal illness in guests who drink the water	Cracked well casing, cross connection with septic system	Bacteria (Coliform Test) Nitrate test
Sodium restricted diet, salty brackish, or bitter taste	Well near seawater, road salt storage site, or heavily salty roadway	Saltwater intrusion, groundwater contamination	Chloride, Sodium, Total Dissolved Solids (TDS)

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