In 2009, the U.S. Geological Survey (USGS) released a report on private water well testing results from across the United States. Private wells tested were from 1991-2004 in the nation’s 62 principal aquifers used for water supply. Importantly, finding tests that one out of every five private wells sampled in the U.S. contained one or more contaminants at concentrations exceeding EPA or human health benchmarks. Approximately half of all wells had at least one problem, and a third of all wells indicated microbial contamination. A number of private water wells sampled in Louisiana showed potentially unsafe levels of arsenic, volatile organic compounds (VOCs) and pesticides, as well as secondary contaminants in standard system tests for pH, hardness, alkalinity, dissolved solids and manganese.


Which contaminants should I test for? Beyond routine well inspections and standard system tests, preliminary tests for biological and chemical contaminants are recommended each year for private water wells throughout Louisiana.

Biological Contaminants

Recommended Tests: Total/Coliform Bacteria

Coliform bacteria sampling will indicate if surface waters, and possibly poorly-managed septic systems or drains, are contaminating your well. Bacteria, except in rare cases, are not naturally present at the depths where private water wells penetrate groundwater, but are naturally filtered out as they are drawn down through the silts and sands above the water table. Coliform bacteria are a generic indicator of the presence of bacteria that originate in soil, vegetation or the intestinal tract of animals and people. Although coliform bacteria are not usually harmful, high levels of fecal bacteria may indicate the presence of other disease-causing bacteria, viruses or parasites. For example E. coli bacteria, as well as cryptosporidium (protozoan parasites) can be very harmful, high levels in your well water may indicate the presence of other disease-causing bacteria, viruses or parasites. For example, certain E. coli bacteria, as well as cryptosporidium (protozoan parasites) can be very harmful, high levels in your well water may indicate the presence of other disease-causing bacteria, viruses or parasites. For example, certain E. coli bacteria, as well as cryptosporidium (protozoan parasites) can be very harmful, high levels in your well water may indicate the presence of other disease-causing bacteria, viruses or parasites.

Other tests to consider:

The following chart provides a quick reference for a number of primary water contaminants that are routinely tested in public water systems due to their set health limits. These should be among those considered for additional testing in private wells. The chart also includes some secondary contaminants and other well-contaminants which well owners may encounter, these tend to be more noticeable (by color, taste or smell) and a nuisance, but in typical concentrations are not currently known to cause health problems.

Please refer to the CDC and EPA public health information sites listed in this brochure for detailed information on exposure (dose, frequency, length of exposure, toxicity, and route), susceptibility and health effects of these contaminants.

Chemical Contaminants

Recommended Tests: Nitrates/Nitrites and Metals

Most private wells are located in rural areas, so a test for nitrate is important as an additional indicator of surface water or wastewater contamination into your well. This nutrient originates mainly in agricultural areas where there is fertilizer use, livestock or poultry but can also be introduced by poorly-managed septic tanks. Excessive levels of nitrate/nitrite in drinking water can be a serious health risk for newborns under 6 months of age. Positive sample results may warrant further testing for pesticides as well. General tests for metals, including arsenic, lead, and cadmium (see the following chart) are also recommended. Heavy metals, such as arsenic, may have been detected in private wells in some Louisiana aquifer systems.

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An aquifer, which is a natural underground water storage area, provides the water supply from above or below ground. Sources can range from natural mineral deposits and naturally occurring bacteria, to smaller or unseen pollution sources such as leaking underground storage tanks, abandoned wells or waste pits. Hurricanes, major rain storms, floods, and damaged wells can also introduce contamination.

It is recommended that owners of domestic wells have their systems routinely inspected and tested for biological and chemical contaminants each year.

**MAJOR LOUISIANA AQUIFERS**

- **Unconsolidated (sand and gravel) alluvial aquifer systems in Louisiana which may be suitable for domestic water well use.**

- **Unsuitability of Alluvial Aquifer Systems for Private Well Water Use**

In Louisiana, the individual well owner is responsible for testing their private well. Louisiana Department of Health (LDH) enforces regulations such as the Safe Drinking Water Regulations. Drilling and testing of private water wells in Louisiana should be conducted to ensure water quality while maintaining the integrity of the underground water supply.

Well inspection and maintenance—was my well properly constructed? Is it functioning properly?

The construction of water wells in Louisiana is addressed by the regulations of LAC 56:1 Chapter 3. In addition, the state sanitary code requires that the individual well owner in Louisiana is responsible for their well water contamination by surface waters or other contaminants detected in your local area.

Who is responsible for monitoring privately-owned domestic water wells?

If sampling results indicate problems (and the well is functioning properly), it is very important to test wells in these aquifer systems for biological and chemical contaminants each year. Sampling results indicate problems (and the well is functioning properly), it is very important to test wells in these aquifer systems for biological and chemical contaminants each year.

Louisiana has two major alluvial aquifer systems, with recharge areas generated by the Red River and the Mississippi River as well as by rainfall and infiltration from other aquifer systems. All waters from these aquifer systems are of good quality, and the recharge areas generated by the Red River and the Mississippi River are considered by the United States Geological Survey (USGS) and United States Environmental Protection Agency (U.S. EPA) to contain concerning levels of arsenic, secondary contaminants and other problems. Arsenic can cause serious acute and chronic health issues, ranging from developmental to neurologic or carcinogenic effects. It is very important to test wells in these aquifer systems for biological and chemical contaminants each year.

Who is responsible for testing my well?

It is recommended that owners of domestic wells have their systems routinely inspected and tested for biological and chemical contaminants each year.

**REFERENCES**


2. LDEQ Asset Sampling Program, Reports/Aquifer Summaries.

3. LDEQ Asset Sampling Program, Reports/Aquifer Summaries.

4. LDEQ Asset Sampling Program, Reports/Aquifer Summaries.

5. LDEQ Asset Sampling Program, Reports/Aquifer Summaries.

6. LDEQ Asset Sampling Program, Reports/Aquifer Summaries.