



Testing to Help Ensure Safe Drinking Water

Public water supplies are tested regularly, and customers are notified of violations so users can rely on water utilities and regulators to ensure safe drinking water. On the other hand, people who use a private water supply are responsible for all quality and safety aspects of their water. When well or spring location, construction, maintenance (with water tests), or protection is deficient, drinking water may not be safe.

Ensuring Safe Drinking Water

Safe water is supplied by a safe well. Wells and springs are often contaminated because of poor location, inadequate construction, delayed or no maintenance, accidents, and lack of protection. Surveys of private wells show about 80 percent are deficient in construction or location. The most common health-concern contaminants are coliform bacteria, especially *E. coli* or fecal coliform, and nitrate. Others include salts (often sodium chloride), petrochemicals, and pesticides. Corrective steps for the owner or water user are:

First, check the well and water system:

1. Evaluate well location and construction against standards (MF-970) and make needed improvements.

Second, maintain, evaluate, and protect the water source:

2. Do preventive maintenance (MF2396), including shock chlorination of the well and water system (MF911).
3. Test water, evaluate results, keep reports for reference, and track trends to detect changes or problems.
4. Develop a plan and follow it to protect your well and groundwater from contamination (MF2396).

What Tests Are Necessary?

There is no single test for drinking water safety. Tests measure specific contaminants, including bacteria, nitrate, lead, arsenic, pesticides, and other contaminants. Surveys show about 60 percent of private wells are polluted by bacteria or nitrate — both have serious health risks.

Test with a purpose (see MF871). Reasons to test include: ensuring safety, detecting changes over time (contamination), and documenting good quality. Annually test for bacteria (coliform and *E. coli* or fecal), nitrate, total dissolved solids, and pH as part of well maintenance. Much more testing is required to ensure safe, bacteria-free water, especially when a well has location or construction deficiencies. Always test for total coliform and *E. coli* (or fecal) bacteria after maintenance or repair of the water source or system.

Before using a water supply for drinking, livestock, or irrigation, test its suitability for those purposes. Conduct tests every 3 to 5 years to detect changes. Consider testing for specific chemicals that have been stored, used, or spilled near the well.

Which Labs Are Qualified?

The only way to judge the quality of a laboratory's service is through independent evaluation. Kansas Department of Health and Environment (KDHE) certifies laboratories following National Environmental Laboratory Accreditation standards. We recommend using laboratories on this list that are certified for the drinking water tests you need or want. For detailed information about specific chemical certification, contact KDHE, Laboratory Improvement Program office (785) 296-3811 or www.kdheks.gov/envolab/. All states have a laboratory certification program. See the table on the back for contacts in adjacent states.

Selecting the Laboratory

Because any certified laboratory should be capable of doing tests accurately — within standards — price is not a good gauge of quality. Costs for nitrate and bacteria tests may range from \$20 to more than \$40. We recommend selecting a laboratory within overnight shipping distance for the carrier you would use. The trade association, American Council of Independent Laboratories www.acil.org, can help in choosing a laboratory.

Collecting and Transporting the Sample

Contact the laboratory to get a sample container. Follow instructions to collect the sample, either from the laboratory or in *Taking a Water Sample*, MF963. After collecting, refrigerate but do not freeze the sample. Protect it from sunlight. For accurate results, the bacteria test must be started within 24 hours of sample collection. Ask the lab about sample delivery, days and times that they begin water tests, and plan accordingly.

Related K-State Water Quality Information

*Kansas Home*A*Syst—Environmental Risk Management Guide for the Home*

Organic Chemicals and Radionuclides in Drinking Water, MF1142

Private Water Well — Owner/Operator Manual, MF2409

Private Well Maintenance and Protection, MF2396

Private Wells — Safe Location and Construction, MF970

Recommended Water Tests for Private Wells, MF871

Restoring a Flooded Well to Service, MF2733

Safe Water from Wells (video), SV386

Shock Chlorination for Private Water Systems, MF911

Taking a Water Sample, MF963

Understanding Your Water Test Report, MF-912

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KDHE Certified Laboratories in Kansas and Nearby States for Drinking Water Testing – May 10, 2010*

Coliform/*E. coli* Bacteria (B), Lead (L), Metals/Minerals (M), Nitrate (N), Organic (O), Radiochemistry (R), Trihalomethane (T), and Unregulated Organics (U)

*Selection from labs listed by KDHE on www.kdheks.gov/envlab/disclaimer.html

Laboratory Name, Location Address and City	Mail Address (If different than location)	Telephone	B	L	M	N	O	R	T	U	Renew
A & E Analytical Lab, Inc, 2626 South Rock Rd, Ste 114, Wichita, KS	Wichita, KS 67210-1857	316-618-8787	B	-	-	-	-	-	-	-	10/10
Accurate Labs Inc, ⁴ 505 South Lowry, Stillwater, OK	Stillwater, OK 74074	405-372-5300	B	L	M	N	O	-	T	-	1/11
ALS Laboratory Group, 225 Commerce Dr, Fort Collins CO (formerly Paragon)	Fort Collins, CO 80524	970-490-1511	-	-	-	-	-	R	-	-	10/10
Continental Analytical Services Inc, 525 N. 8th St, Salina, KS (800-535-3076)	POBox 3737, Salina 67401-3737	785-827-1273	B	L	M	N	O	-	T	-	7/10
Environmental Labs Inc, 821 N. Washington St, Auburn, KS 66402	PO Box 120, Auburn, KS 66402-0120	785-256-7330	B	-	-	-	-	-	-	-	4/11
Hazen Research Inc, 4601 Indiana Street, Golden, CO	Golden, CO 80403-1895	303-279-4501	-	-	-	-	-	R	-	-	10/10
Keystone Laboratories Inc, 1155 Adams St, Ste 120, Kansas City, KS	600 East 17th South, Newton, IA 50208	913-321-7856	B	-	-	-	-	-	-	-	4/11
Pace Analytical Services Inc, 9608 Loiret Boulevard, Lenexa, KS	Lenexa, KS 66219-2406	913-599-5665	B	-	M	N	-	-	-	-	4/11
SDK Laboratories Inc, 1000 Corey Road, Hutchinson, KS (877-464-0623)	PO Box 886, Hutchinson, KS 67504-0886	620-665-5661	B	-	-	N	-	-	-	-	10/10
Servi-Tech Laboratories Inc, 1816 E Wyatt Earp Blvd (800-557-7509)	PO Box 1397, Dodge City, KS 67801-1397	620-227-7123	B	-	M	N	-	-	-	-	10/10
TestAmerica Denver, Inc, 4955 Yarrow Street, Arvada, CO	Arvada, CO 80002-4517	303-736-0100	B	L	M	N	-	-	-	-	4/11
TestAmerica St Louis, Inc, 13715 Rider Trail No., Earth City, MO	Earth City, MO 63045-1205	314-298-8566	-	-	-	-	-	R	-	-	10/10
Underwriters Laboratories Inc, 110 South Hill Street, South Bend, IN	South Bend, IN 46617	219-233-4777	B	L	M	N	O	R	T	U	7/10
University Hygienic Laboratory, UI Research Park, Oakdale Campus, Iowa City, IA	102 Oakdale Campus, UI, Iowa City, IA 52242-5002	319-335-4500	B	L	M	N	O	R	T	-	1/11

Certified by: ¹Colorado Dept of Public Health and Environment 303-692-3295, website: www.cdph.state.co.us/lr/certification; ²Missouri Dept of Natural Resources 573-526-3832, website: www.dnr.mo.gov/env/wpp/labs; ³Nebraska Health and Human Services (Private Drinking Water) 402-471-8426, option 7, website: www.hhs.state.ne.us/lab/certificationindex.htm, UofN Extension bulletin, G1614: www.ianrpubs.unl.edu/epublic/live/g1614/build/g1614.pdf; ⁴Oklahoma Department of Environmental Quality 405-702-1024, website: www.deq.state.ok.us/cs/new/labcert.htm; The NELAC Institute (TNI) develops standards and administers the Laboratory Accreditation System and National Environmental Laboratory Accreditation, website: www.nelac-institute.org; National EPA website: www.epa.gov/safewater/labs/

Publications are reviewed or revised annually by appropriate faculty to reflect current research and practice. Date shown is that of publication or last revision.

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