WATER Quality

K-STATE Kansas State University

Testing to Help Ensure Safe Drinking Water

Public water supplies are tested regularly. Thus users do not need to be concerned about the safety of their drinking water. On the other hand, people who have a private water supply are responsible for all quality and safety aspects of their water supply. If a well's location, construction, maintenance (including water tests), or protection are deficient, safe drinking water can not be reliable.

Ensuring Safe Drinking Water

Wells are often contaminated because of poor location, inadequate construction, delayed or no well maintenance, accidents, and lack of protection. Surveys of private wells have shown about 80 percent are deficient in construction or location. The most common contaminants of health concern are coliform bacteria, especially fecal coliform or *E. coli,* and nitrate followed by salts (often sodium chloride), petrochemicals, and pesticides. Safe water is supplied by a safe well. This requires action by the owner or water user. Begin by checking the well and water system, and include these elements:

1. Check well location and construction against standards. (MF-970) and make necessary improvements.
2. Do annual preventive maintenance including shock chlorination of the well and water system (MF-911).
3. Test water, keep test reports for reference, and compare reports to detect changes or problems.
4. Develop and carefully follow a plan to protect well and groundwater from contamination (MF-2396).

What Tests Are Necessary?

There is no single test for safe drinking water. Tests are for specific contaminants including bacteria, nitrate, fluoride, lead, pesticides, etc. Surveys show about 60 percent of private wells are polluted by bacteria or nitrate, both of which have potentially serious health risks.

Test with purpose(s) (see MF-871), including to assure safety, detect changes with time (contamination), or document good quality. Test for coliform bacteria, nitrate, total dissolved solids, and pH as part of annual well maintenance. Much more frequent tests are needed to assure safe, bacteria-free water, especially when a well has a deficiency. Always test for coliform and fecal, or *E. coli*, bacteria after any maintenance or repair of the well or water system.

Before using a well for drinking or irrigation, test the water's suitability for that purpose. Retest for suitability every 3 to 5 years. 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 laboratory service is through independent evaluation. Kansas Department of Health and Environment (KDHE) does laboratory certification for Kansas. We recommend only laboratories certified for the drinking water tests you want. This leaflet lists laboratories certified in Kansas and nearby states for these tests. For detailed information about specific chemical certification, contact KDHE, Laboratory Improvement program office (785) 296-1639 or *www.kdhe.state.ks.us/envlab/index.html*. All states have a laboratory certification program similar to Kansas. Contacts are listed in the table on the back.

Selecting the Laboratory

Because any laboratory certified for the test you want should be equally capable to do the test, price is not a good gauge of quality. Nitrate and bacteria tests from one laboratory may be $20, yet others may charge $50. The trade association, American Council of Independent Laboratories (*www.acil.org)* may help in choosing a laboratory. We recommend selecting a laboratory within overnight shipping by U.S. Postal Service or other carrier.

Collecting and Transporting the Sample

Contact the laboratory to get a sample container. To collect the sample, follow instructions, either from the laboratory or K-State Research and Extension publication MF-963. After collecting, refrigerate, but do not freeze, the sample, and keep it out of the sunlight.The bacteria test must be started within 24 hours of sample collection for accurate results. Ask the lab for the days and times that they start water tests and plan accordingly.

Related K-State Water Quality Titles:

An Action Program for Safe Drinking Water, MF-1050
*Kansas Home*A*Syst–Environmental Risk Management for Homes*
Organic Chemicals and Radionuclides in Drinking Water, MF-1142
Private Water Well—Owner/Operator Manual, MF-2409
Private Well Maintenance and Protection, MF-2396
Private Wells—Safe Location and Construction, MF-970
Recommended Water Tests for Private Systems, MF-871
Shock Chlorination for Private Water Systems, MF-911
Taking a Water Sample, MF-963
Understanding Your Water Test Report, MF-912

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KDHE Certified Laboratories in Kansas and Nearby States for Drinking Water Testing Sept 2005

Coliform Bacteria (B), Lead (L), Metals/Minerals (M), Nitrate (N), Organic (O), Radiochemicals (R), and Trihalomethane (T)

Laboratory Name, Location Address and City	Mail Address	Telephone	B	L	M	N	O	R	T	U	Renew
Analytical Management Laboratories Inc, Olathe, KS 66062-2760	15130 So. Keeler, Suite B	913-829-0101	–	L	M	N	O	–	T	U	4/06
Continental Analytical Services Inc, 525 N. 8th St, Salina, KS	POBx 3737 Salina 67401-3737 800-535-3076	785-827-1273	B	L	M	N	O	–	T	U	7/06
Dean's Water Lab Inc, 6268 NW County Line Rd, Benton, KS 67017	P O Box 610, Andover, KS 67002-9780	316-733-2682	B	–	–	–	–	–	–	–	10/05
Environmental Laboratories Inc, 821 N. Washington St, Auburn	P O Box 120, Auburn, KS 66402-0120	785-256-7330	B	–	–	N	–	–	–	–	4/06
General Laboratories Inc, Hutchinson, KS 67501-4501	1202 North Main Street	620-663-8314	B	–	–	–	–	–	–	–	10/05
Hazen Research Inc, Golden, CO 80403-1895	4601 Indiana Street	303-279-4501	–	–	–	–	–	R	–	–	10/05
Keystone Laboratories Inc, Kansas City, KS 66103-1359	1304 Adams Street	913-321-7856	B	–	–	N	–	–	–	–	4/06
M D Chemical & Testing Inc, Forbes Field Bldg No 281, Suite AB	P O Box 19321, Topeka, KS 66619-0321	785-862-3500	–	L	M	N	–	–	–	–	4/06
Midwest Laboratories Inc,* Omaha, NE 68144	13611 "B" Street	402-334-7770	B	L	M	N	–	–	–	–	12/06
Olsen Agricultural Laboratory Inc,* McCook, NE 69001-0370	210 East First Street / P O Box 370	308-345-3670	B	–	–	N	–	–	–	–	12/06
Pace Analytical Services Inc, Lenexa, KS 66219-2406	9608 Loiret Boulevard	913-599-5665	B	–	M	N	–	–	–	–	4/06
Paragon Analytics, Fort Collins, CO 80524	225 Commerce Drive	970-490-1511	–	L	M	N	O	R	T	U	7/06
SDK Laboratories Inc, 1000 Corey Road (877-464-0623)	P O Box 886, Hutchinson, KS 67504-0886	620-665-5661	B	–	–	N	–	–	–	–	10/05
Servi-Tech Laboratories Inc, 1816 E Wyatt Earp Blvd 800-557-7509	P O Box 1397, Dodge City, KS 67801-1397	620-227-7123	B	–	M	N	–	–	–	–	10/05
Servi-Tech Laboratories Inc,** 1602 Park West Drive, Hastings	P O Box 169, Hastings, NE 68902-0169	402-463-3522	B	L	M	N	–	–	–	–	12/06
STL – Denver, 4955 Yarrow Street, Arvada, CO 80002-4517	Arvada, CO 80002-4517	303-726-0100	B	L	M	N	O	–	T	U	4/06
STL – St Louis, 13715 Rider Trail North, Earth City, MO	Earth City, MO 63045-1205	314-298-8566	–	–	–	–	–	R	–	–	10/05
Underwriters Laboratories Inc, South Bend, IN 46617-2702	110 South Hill Street	219-233-4977	B	L	M	N	O	R	T	U	7/06

Certified (*Public Water Systems or ** Private Wells Only) by Nebraska, Health and Human Services

Laboratory Certification Program: National EPA Web site: www.epa.gov/safewater/labs/index.html; Adjacent states: Colorado (303)692-3291 Web site: www.cdphe.state.co.us/lr/certification/sdwlist.pdf; Missouri (573) 526-3832 Web site: www.dnr.state.mo.us/wpscd/wpcp/labs/index.html; Nebraska (402) 471-2122 option 7; and Oklahoma (405)702-1024 Web site: *www.deq.state.ok.us/csdnew/labcert.htm*

Check the Web site, *www.oznet.ksu.edu/library* for updated versions of this file.

Laboratory Certification Program: National EPA Web site: www.epa.gov/safewater/labs/index.html; Adjacent states: Colorado (303)692-3291 Web site: www.cdphe.state.co.us/lr/certification/sdwlist.pdf; Missouri (573) 526-3832 Web site: www.dnr.state.mo.us/wpscd/wpcp/labs/index.htm; Nebraska (402) 471-2122; and Oklahoma (405)702-1024 Web site: www.deq.state.ok.us/csdnew/labcert.htm

Publications from Kansas State University are available on the World Wide Web at: http://www.oznet.ksu.edu

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