

Who We Work With

The WSL is a Nebraska-focused laboratory with connections in over 24 countries. This global network serves environmental and water-related research needs as an extension of University of Nebraska faculty, staff and students.

In Nebraska, we support:

- ❖ University of Nebraska faculty and student research
- ❖ Other academic institutions within the state
- ❖ State and federal agencies and researchers
- ❖ Nebraska businesses, industry and citizens



Partner With Us

Students

- ❖ Work alongside scientists
- ❖ Design your own research project
- ❖ Assist in developing new methods
- ❖ Gain hands-on experience through a paid or volunteer internship
- ❖ Learn with hands-on training in advanced laboratory methods

Community

- ❖ Let us help with your water resources questions and issues
- ❖ Use our methods and equipment to support your project
- ❖ Train your students and staff in environmental and isotope testing methods



Water Sciences Laboratory

Contact us to learn more, become a partner or to inquire about our student opportunities.

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For additional information: watercenter.unl.edu/wsl



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Nebraska Water Sciences Laboratory

Research Support
for Water Sciences

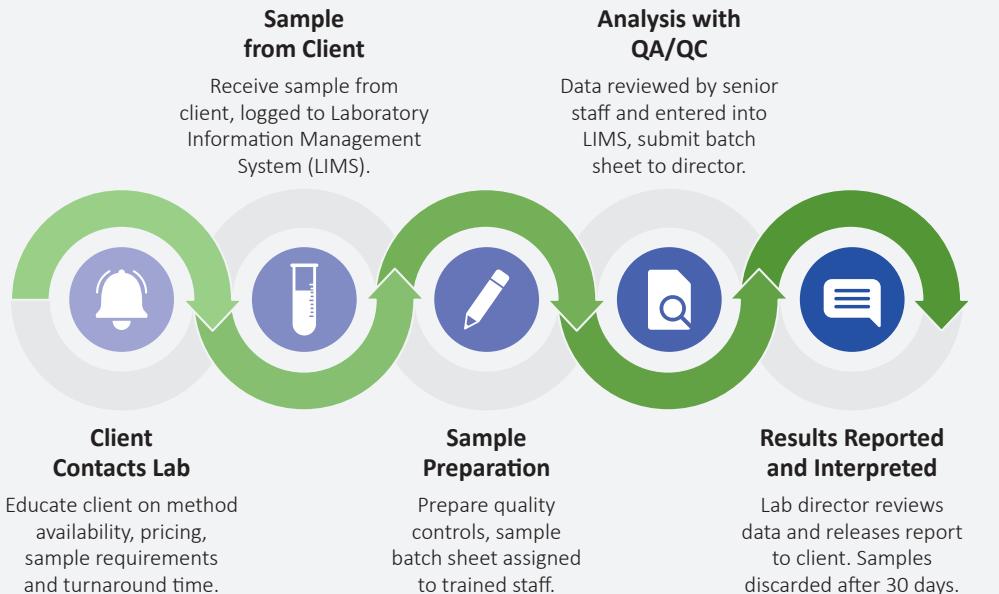


30 YEARS OF EXCELLENCE

Part of the Nebraska Water Center, the Water Sciences Laboratory (WSL) core facility has over 30 years of experience advancing the University of Nebraska's water and environmental research. With over \$3 million in state-of-the-art equipment, the WSL supports 200+ custom and standard analytical methods that include rigorous performance evaluation monitoring. Thousands of samples are analyzed annually with quality controls demonstrating our commitment to provide high quality defensible data to our clients.

The Water Sciences Laboratory provides quality expertise, technology, training and service in support of water science.

A Sample's Journey Through the Lab



A Sampling of our Methods and Instrumentation

Environmental Mass Spectrometry

Purpose: Sensitive detection of water soluble organic chemicals, like antibiotics, pharmaceuticals, cyanotoxins, steroids and new pesticides

Capabilities

- Automated high-sensitivity analysis of a wide variety of organic contaminants
- Suitable for thermally fragile compounds
- Applies to the separation of any compound that is soluble in a liquid phase

Examples of Instrumentation

- Waters Xevo TQS micro with 2D UPLC interface and Waters Quattro micro triple quadrupole mass spectrometers
- Agilent gas chromatography mass spectrometry (GC/MS) systems



Xevo TQS Tandem Quadrupole Mass Spectrometer with 2D UPLC Interface

Stable Isotope + Noble Gas Analyses

Purpose: High-precision measurements of naturally-occurring isotopes of hydrogen, carbon, nitrogen and oxygen. Natural variations of the abundance of these isotopes can help discover the origin and flow of these elements in the environment

Capabilities

- Stable isotope analysis of gases, water and solids
- Isotopic composition of nitrate, ammonia nitrogen phosphate and carbonate
- Hydrogen and oxygen isotope analysis for water
- Ground water age dating by noble gas extraction, helium isotope and tritium analysis

Examples of Instrumentation

- Thermo Helix SFT noble gas mass spectrometer with Hiden quadrupole gas analyzer, GVI Isoprime Isotope Ratio Mass Spectrometer with Tracegas preconcentrator system



Thermo Helix SFT Noble Gas Mass Spectrometer

Wet Chemistry and Trace Elements

Purpose: Analysis of water quality and composition using ion chromatography, spectrophotometry and automated analyzers

Capabilities

- High-throughput inorganic ions, nutrients, carbon and trace element/redox species testing

Examples of Instrumentation

- Dionex ICS-90 Ion Chromatograph, Seal AQ2 Autoanalyzer, Thermo ICAP-RQ inductively coupled plasma mass spectrometer with speciation interface