

Environmental Analysis Laboratory

EAL provides chemical, physical, and microbial analysis of water and other environmental media for University researchers, public agencies, and other clients. Staffed with research chemists, EAL supports a range of environmental research, management, and monitoring activities, and has a particular strength in water-related analyses requiring substantial numbers of samples. The EAL is well established as a premier source of high quality analytical services for inorganic substances in water including nutrients, inorganic anions, and metals and in the determination of trace concentrations of phosphorus.

The EAL was originally set up to assist the Acid Rain Monitoring Project in analyzing more than 40,000 samples. It now also serves the University community, public agencies, and other clients and growing needs for environmental monitoring and analyses. EAL also maintains connections with other professional laboratories on the UMass Amherst campus such as the Mass Spectrometry Facility, the MA Pesticide Analysis Laboratory, the Microanalysis Laboratory, and the Trace Analysis Lab.

The EAL is a partnership between the Water Resources Research Center and the Chemistry Department and provides analyses and support for new methods development.

Price List

The prices quoted are single sample costs. Requests for analyses must come directly as part of a research project, from an educational institution, public agency or citizen monitoring group. The EAL does not conduct analyses for the private sector except under these conditions, nor does it conduct analyses for individuals.

Water Analysis Parameter	Standard		Low-level	
	LOD	\$	LOD	\$
Acidity, titration		\$18		
Alkalinity, Double End Pt.	250	\$18		
Aluminum	10	\$27	0.2	\$30
Aluminum-monomeric (extraction/analysis)			3	\$60
Ammonia		\$48		
Antimony	20	\$27	0.2	\$30
Arsenic**	20	\$27	0.2	\$30
Barium	0.3	\$27	0.03	\$30
Cadmium	1	\$27	0.1	\$30
Calcium	0.5	\$27	0.005	\$30
Carbon, Dissolved Inorganic (DIC)		\$30		
Carbon, Dissolved Organic (DOC)		\$30		
Chlorophyll a*	1	NA		
Chloride***	70	\$27		
Chromium	20	\$27	0.02	\$30
Color, true		\$12		
Copper	4	\$27	0.04	\$30
Dissolved Oxygen (mod. Winkler)	100	\$18		
Iron	1	\$27	0.01	\$30
Lead	10	\$27	0.1	\$30
Magnesium	0.4	\$27	0.01	\$30
Manganese	1	\$27	0.01	\$30
Mercury, total**	10	\$27	0.01	\$30
Nickel	5	\$27	0.05	\$30
Nitrate-N***	3	\$30		
Nitrite		\$30		
pH		\$12		
pH, closed head space		\$30		
Phosphorus, total*	2	\$42		
Phosphorus, ortho	2	NA		
Potassium	10	\$27	0.01	\$30
Selenium	40	\$27	0.4	\$30
Silicon	100	\$27	1	\$30

Water Analysis Parameter	Standard		Low-level	
	LOD	\$	LOD	\$
Sodium	5	\$27	0.05	\$30
Solids - total, dissolved, suspended (ea)		\$22		
Specific Conductance		\$18		
Sulfate***	60	\$27		
Titanium	4	\$27	0.04	\$30
Turbidity		\$18		
Vanadium	5	\$27	0.05	\$30
Zinc	2	\$27	0.02	\$30

LOD = Limits of Detection in parts per billion

* These parameters are not currently offered but may be available by request

** Project-specific changes may apply depending on concentrations & if lower LOD needed

*** Ion-chromatography

Standard = ICP emission spectrometry (OES)

Low-level = ICP mass spectrometry (MS) & graphite furnace atomic absorption spectrometry (GF AAS)

Note: For multi-analyte determinations by ICP (OES or MS) the second and subsequent element can be charged at \$5/element. No discounts for GF AAS.

Sample Preparation	\$60 per hour
Consultant Level I	\$100 per hour
Consultant Level II	\$150 per hour
Consultant Level III	\$215 per hour



Quality Control Services

The EAL runs a quality control (QC) program for volunteer water quality monitoring, sending blind samples for the analysis of dissolved oxygen, pH, and alkalinity to volunteer labs each month. Blind QC samples are prepared and sent to volunteer groups. Volunteers analyze the samples and call in their results to check on their accuracy. Staff compares volunteer results to the expected values and informs the volunteer labs if they meet the data quality criteria. Volunteers can request a DO sample, a pH/alkalinity sample, or both. Contact us at wrrceal@tei.umass.edu for more information.



Equipment

- Inductively Coupled Plasma Emission and Mass Spectrometers
- Graphite Furnace
- Atomic Absorption Spectrometer
- HPLC Ion Analyzer
- Cold Vapor Mercury Analyzer
- pH Meter
- Closed Head Space pH Apparatus
- Conductivity Meter
- UV-visible Spectrometer
- Microwave-assisted Digester
- Perchloric Acid-Grade Hood

Dr. Julian Tyson, Lead Chemist
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Contact Information

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