Water Sciences Laboratory Analyte/Protocol Price List 2022

Nebraska Water Center
Daugherty Water *for* Food Global Institute

Standard Method :: Water

Nebraska Water Center, a part of the
Robert B. Daugherty Water for Food Global Institute at the University of Nebraska
e:dsnow1.unl.edu | p: 1 402.472.7539 | f: 1 402.472.9599 | c: 1 402.304.3748

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Ammonia-N **Protocol ID: 02_01_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "EPA 103A Ammonia-N in Drinking and Surface Waters, Domestic and Industrial Wastes".	**Ammonia-N**	0.02 mg-N/L	**$13.90**	$11.12
Nitrate-N with nitrite-N subtraction **Protocol ID: 02_02_01** **Additional Protocol Required:** 02_04_01 **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **Reference:** (1993), "EPA 353.2 Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry".	**Nitrate-N**	0.01 mg-N/L	**$14.40**	$11.52

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Nitrate-N+nitrite-N **Protocol ID: 02_03_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 125 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** Seal Analytical "EPA 127A Nitrate-N + Nitrite-N in Drinking and Surface Waters Domestic and Industrial Wastes".	**Nitrate-N**	0.06 mg-N/L	**$13.90**	$11.12
Nitrite-N **Protocol ID: 02_04_01** **Additional Protocol Required:** 02_02_01 **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **Reference:** Seal Analytical (2009), "EPA 116A Nitrite-N in Drinking Waters, and Domestic and Industrial Wastes".	**Nitrite-N**	0.004 mg-N/L	**$17.30**	$13.84
Silica **Protocol ID: 02_05_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** Seal Analytical (2009), "EPA 232A Silica in Drinking, saline and surface waters, and Domestic and Industrial Wastes".	**SiO2**	0.3 mg/L	**$13.90**	$11.12

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Soluble phospate **Protocol ID: 02_06_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **References:** Seal Analytical "EPA-118-A". (1993), "EPA 365.1 Determination of Phosphorus by Semi-Automated Colorimetry".	**Phosphate-P**	0.02 mg-P/L	**$13.90**	$11.12
Total Kjeldahl nitrogen **Protocol ID: 02_07_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** Seal Analytical "EPA 111A Total Kjeldahl Nirtogen-N (copper catalyst) in Drinking, Ground, and Surface Waters, and Domestic and Industrial Wastes".	**Total Kjeldahl Nitrogen**	0.1 mg-N/L	**$28.90**	$23.12
Total Kjeldahl phosphorus **Protocol ID: 02_08_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **References:** Seal Analytical (2009), "EPA 135A Total Phosphorus-P in Kjedahl Digests of Drinking water, domestic and Industrial Wastes (copper catalyst Method)".	**Total Kjeldahl Phosporus**	0.1 mg-P/L	**$28.90**	$23.12

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
(1974), "EPA 365.4 Phosphorous, Total (Colorimetric, Automated, Block Digester AA II)".				
Total dissolved phosphorus **Protocol ID: 02_09_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1993), "EPA 365.1 Determination of Phosphorus by Semi-Automated Colorimetry".	**Total Dissolved P**	0.08 mg-P/L	**$23.10**	$18.48
Total nitrogen **Protocol ID: 02_10_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "Standard Methods 4500P",	**Total Nitrogen**	0.06 mg-N/L	**$23.10**	$18.48
Total phosphorus **Protocol ID: 02_11_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** Seal Analytical "EPA 119A Phosphorus-P, total, in Surface and Saline Waters and Domestic and Industrial".	**Total Phosphorus**	0.08 mg-P/L	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Water extractable phosphate **Protocol ID: 02_12_01** **Sample Container:** 125 mL wide mouth amber glass bottle **Sample Size:** Pending **Preservation:** Frozen **Holding Time:** 60 Days **Estimated Turnaround Time:** 6-8 Weeks	**Phosphate-P**	Pending	**$14.40**	$11.52
Total dissolved nitrogen **Protocol ID: 02_14_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks	**TDN**	0.01 mg-N/L	**$23.10**	$18.48
Conductivity **Protocol ID: 03_03_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **Reference:** "Standard Methods 2510",	**Conductivity**	1 µS/cm	**$9.20**	$7.36
Dissolved oxygen **Protocol ID: 03_04_01** **Sample Container:** 40 mL septum vial **Sample Size:** 40 mL **Preservation:** None **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **Reference:** "Standard Methods 4500O",	**DO**	0.1 mg/L	**$18.50**	$14.80

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
pH **Protocol ID: 03_05_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** None **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **Reference:** (2000), "Standard Methods 4500H - pH Value",	**pH**		**$11.60**	$9.28
Urea by UV Colorimetry with diacetyl monoxime **Protocol ID: 04_09_01** **Sample Container:** 20 mL Scintilation Vial **Sample Size:** 20 mL **Preservation:** Frozen **Holding Time:** 7 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** Li Chen, Jian Ma, Yang Huang, Minhan Dai, Xiaolin Li (2015), "Optimization of a colorimetric method to determine trace urea in seawater", *Limnol. Oceanogr.: Methods* **13**, 303-311.	**Urea**	0.06 mg/L	**$21.00**	$16.80
Chemical oxygen demand **Protocol ID: 04_10_01** **Sample Container:** 40 mL septum vial **Sample Size:** 250 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1999), "Standard Methods 5220D - Chemical Oxygen Demand, Closed Reflux, Colorimetric Method",	**COD**	25 mg/L	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Dissolved organic carbon **Protocol ID: 05_01_01** **Sample Container:** 40 mL septum vial **Sample Size:** 40 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "Standard Methods 5310 - Total Organic Carbon",	**DOC**	0.05 mg C/L	**$23.10**	$18.48
Total organic carbon **Protocol ID: 05_02_01** **Sample Container:** 40 mL septum vial **Sample Size:** 40 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "Standard Methods 5310 - Total Organic Carbon",	**TOC**	0.05 mg C/L	**$23.10**	$18.48
Total solids **Protocol ID: 17_01_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 150 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1997), "EPA 2540B Total Solids Dried at 103-105oC".	**TS**	10 mg/L	**$11.60**	$9.28
Total suspended solids **Protocol ID: 17_02_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 150 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days	**TSS**	10 mg/L	**$11.60**	$9.28

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Estimated Turnaround Time: 6-8 Weeks **Reference:** (1997), "EPA 2540D Total Suspended Solids Dried at 103-105oC".				
Turbidity **Protocol ID: 17_03_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1992), "Standard Methods 2130B - Turbidity: Nephelometric Method",	**Turbidity**	0.1 NTU	**$9.20**	$7.36
Total volatile solids **Protocol ID: 17_04_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1997), "Standard Methods 2540G - Total, Suspended, and Volatile Solids in Solid and Semisolid Samples",	**TVS**	10 mg/L	**$9.20**	$7.36
Volatile dissolved solids **Protocol ID: 17_05_01** **Sample Container:** 1 liter amber bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1997), "Standard Methods 2540C - Volatile Dissolved Solids Dried at 180oC",	**VDS**	10 mg/L	**$9.20**	$7.36

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Volatile suspended solids **Protocol ID: 17_06_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1997), "Standard Methods 2540E - Volatile Suspended Solids in Solid and Semisolid Samples",	**VSS**	10 mg/L	**$9.20**	$7.36
Water hardness by calculation **Protocol ID: 17_07_01** **Additional Protocol Required:** 21_01_01 **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 250 mL **Preservation:** Add nitric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "EPA 130.2 Hardness, Total (mg/L as CaCO3) (Titrimetric, EDTA)".	**Hardness (mgCaCO3/L)**	0.05 mg/L	**$10.50**	$8.40
Oil and grease **Protocol ID: 17_08_01** **Sample Container:** Pending **Sample Size:** 1000 mL **Preservation:** Add sulfuric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (2009), "EPA 1664A Oil and Grease".	**Oil and Grease**	5 mg/L	**$57.80**	$46.24

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Suspended sediment concentration **Protocol ID: 17_10_01** **Sample Container:** 250 mL plastic bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (2013), "ASTM D3977 - 97",	**SSC**	0.5 mg/kg	**$11.60**	$9.28
Total disolved solids **Protocol ID: 17_11_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 125 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1999), "EPA 160.1 Total Dissolved Solids (TDS)".	**TDS**	10 mg/L	**$11.60**	$9.28
Potentiometric tititration of alkalinity **Protocol ID: 17_12_01** **Sample Container:** 250 mL plastic bottle **Sample Size:** 200 mL **Preservation:** Cool, < 6ºC **Holding Time:** 7 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "Standard Methods 2320B",	**Alkalinity as CaCO3** **Alkalinity as HCO3**	10 mg/L 5 mg/L	**$17.30**	$13.84
Bacteria in water **Protocol ID: 17_13_01** **Sample Container:** Sterile 120mL bottle **Sample Size:** 100 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days	**E. coli** **Total coliform**	1 MPN/100mL 1 MPN/100mL	**$25.20**	$20.16

Turnaround times are subject to existing sample queues Reporting Limits are subject to verification

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Estimated Turnaround Time: 2-3 Weeks **Reference:** "IDEXX Colilert-18 Test Kit for the Determination of E.coli and Coliform Bacteria in Water Samples",				
Specific Gravity **Protocol ID: 17_14_01** **Sample Container:** Pending **Sample Size:** 10 mL **Preservation:** Pending **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks	**Specific gravity**	0.1 mg/L	**$12.60**	$10.08
Biological Oxygen Demand **Protocol ID: 17_15_01** **Sample Container:** 40 mL septum vial **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1999), "Standard Methods 5210 B - Biochemical Oxygen Demand (BOD) (5-day BOD Test)",	**BOD**	0.5 mg/L	**$23.10**	$18.48
Free chlorine **Protocol ID: 17_16_01** **Sample Container:** Pending **Sample Size:** 250 mL **Preservation:** Pending **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks	**Free chlorine** **Total chlorine**	0.02 ppm 0.02 ppm	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Dissolved elements in water by ICP-OES - 6010D **Protocol ID: 21_01_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Add nitric acid to pH < 2, Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (2018), "EPA 6010D Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES)".	**Aluminum** **Calcium** **Copper** **Iron** **Magnesium** **Manganese** **Potassium** **Sodium**	0.01 mg/L 0.009 mg/L 0.007 mg/L 0.006 mg/L 0.01 mg/L 0.008 mg/L 0.01 mg/L 0.01 mg/L	**$30.00**	$24.00
Major anions in water **Protocol ID: 22_01_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 50 mL **Preservation:** Cool, < 6ºC **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1993), "EPA 300 Determination of Inorganic Anions by Ion Chromatography".	**Bromide** **Chloride** **Fluoride** **Nitrate-N** **Nitrite-N** **Phosphate-P** **Sulfate**	0.1 mg/L 0.1 mg/L 0.1 mg/L 0.1 mg/L 0.1 mg/L 0.1 mg/L 0.1 mg/L	**$28.90**	$23.12