Water Sciences Laboratory Analyte/Protocol Price List 2024

Nebraska Water Center
Daugherty Water *for* Food Global Institute

Standard Method :: Water

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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 **References:** "EPA 103A Ammonia-N in Drinking and Surface Waters, Domestic and Industrial Wastes". (1993), "EPA 350.1 Determination of Ammonia Nitrogen by Semi-Automated Colorimetry".	**Ammonia-N**	0.01 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:** 125 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

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

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 **References:** Seal Analytical "EPA 127A Nitrate-N + Nitrite-N in Drinking and Surface Waters Domestic and Industrial Wastes". (1993), "EPA 353.2 Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry".	**Nitrate-N**	0.01 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:** 125 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **References:** Seal Analytical (2009), "EPA 116A Nitrite-N in Drinking Waters, and Domestic and Industrial Wastes". (1993), "EPA 353.2 Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry".	**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	**SiO2**	0.1 mg/L	**$13.90**	$11.12

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References: Seal Analytical (2009), "EPA 232A Silica in Drinking, saline and surface waters, and Domestic and Industrial Wastes". (1978), "EPA 370.1 Silica by Colorimetry".				
Dissolved Reactive Phosphorus **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 (TKN) **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 **References:** Seal Analytical "EPA 111A Total Kjeldahl Nirtogen-N (copper catalyst) in Drinking, Ground, and Surface Waters, and Domestic and Industrial Wastes". (1993), "EPA 351.2 Determination of Total Kjeldahl Nitrogen by Semi-Automated Colorimetry".	**Total Kjeldahl Nitrogen**	0.2 mg-N/L	**$28.90**	$23.12

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Total Kjeldahl Phosphorus (TKP) **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)". (1974), "EPA 365.4 Phosphorous, Total (Colorimetric, Automated, Block Digester AA II)".	**Total Kjeldahl Phosporus**	0.03 mg-P/L	**$28.90**	$23.12
Total Dissolved Phosphorus (TDP) - Persulfate Oxidation **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 **References:** (1993), "EPA 365.1 Determination of Phosphorus by Semi-Automated Colorimetry". Seal Analytical "EPA 119A Phosphorus-P, total, in Surface and Saline Waters and Domestic and Industrial".	**Total Dissolved P**	0.08 mg-P/L	**$23.10**	$18.48
Total Nitrogen (TN) - Persulfate Oxidation **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	**Total Nitrogen**	0.06 mg-N/L	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
References: "Standard Methods 4500P", (1993), "EPA 353.2 Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry".				
Total Phosphorus (TP) - Persulfate Oxidation **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 **References:** Seal Analytical "EPA 119A Phosphorus-P, total, in Surface and Saline Waters and Domestic and Industrial". (1993), "EPA 365.1 Determination of Phosphorus by Semi-Automated Colorimetry".	**Total Phosphorus**	0.06 mg-P/L	**$23.10**	$18.48
Total Dissolved Nitrogen (TDN) - Persulfate Oxidation **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 **References:** "Standard Methods 4500P", (1993), "EPA 353.2 Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry".	**TDN**	0.01 mg-N/L	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
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 (DO) **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
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
Bromide by Ion Selective Electrode **Protocol ID: 03_06_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 60 mL **Preservation:** Cool, < 6ºC	**Bromide**	Pending	**$11.60**	$9.28

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Holding Time: 2 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "EPA 9211 Potentiometric Determination of Bromide in Aqueous Samples with Ion-Selective Electrode".				
Dissolved Hydrogen Sulfide **Protocol ID: 04_04_01** **Sample Container:** 250 mL glass bottle **Sample Size:** 250 mL **Preservation:** Cool, < 6ºC **Holding Time:** 60 Days **Estimated Turnaround Time:** 6-8 Weeks	**Sulfide (S2-)**	Pending	**$17.30**	$13.84
Specific Ultraviolet Absorbance (SUVA) - 254 nm **Protocol ID: 04_08_01** **Sample Container:** 40 mL septum vial **Sample Size:** 40 mL **Preservation:** Cool, < 6ºC **Holding Time:** 60 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (2009), "EPA 415.3 Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water AND DRINKING WATER".	**Absorbance**	Pending	**$5.20**	$4.16
Urea - Colorimetric - 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),	**Urea**	3 mg/L	**$21.00**	$16.80

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
"Optimization of a colorimetric method to determine trace urea in seawater", *Limnol. Oceanogr.: Methods* **13**, 303-311.				
Chemical Oxygen Demand (COD) **Protocol ID: 04_10_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:** (1999), "Standard Methods 5220D - Chemical Oxygen Demand, Closed Reflux, Colorimetric Method",	**COD**	15 mg/L	**$23.10**	$18.48
Dissolved Organic Carbon (DOC) **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**	0.1 mg C/L	**$23.10**	$18.48
Total Organic Carbon (TOC) **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**	0.1 mg C/L	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Chlorophyll A **Protocol ID: 09_01_01** **Sample Container:** Unfiltered: 125 mL polyethylene bottle Filtered: 0.70 µm GF/F glass fiber filter (47 mm) wrapped in Al foil **Sample Size:** 50 mL **Preservation:** Unfiltered: Dark, < 6ºC Filtered: Dark, -20ºC **Holding Time:** Unfiltered: 2 Days Filtered: 60 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** (1997), "EPA 447.0 Determination of Chlorophylls a and b and Identification of Other Pigments of Interest in Marine and Freshwater Algae Using High Performance Liquid Chromatography with Visible Wavelength Detection".	**Chlorophyll A**	0.5 µg/L	**$17.30**	$13.84
Carbon Dioxide, Methane, and Nitrous Oxide in Water Headspace **Protocol ID: 09_15_07** **Sample Container:** 12 mL Exetainer **Sample Size:** 12 mL **Preservation:** Pending **Holding Time:** 60 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** R.C. Upstill-Goddard, A.P. Rees, N.J.P. Owens (1996), "Simultaneous high-precision measurements of methane and nitrous oxide in water and seawater by single phase equilibration gas chromatography", *Deep Sea Research Part I: Oceanographic Research Papers* **43**(10), 1669-1682.	**Carbon dioxide** **Methane** **Nitrous oxide**	20 umoles/L 0.4 umoles/L 0.1 umoles/L	**$28.90**	$23.12

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Total Solids (TS) **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 (TSS) **Protocol ID: 17_02_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 2540D Total Suspended Solids Dried at 103-105oC".	**TSS**	5 mg/L	**$11.60**	$9.28
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

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Total Volatile Solids (TVS) **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 (VDS) **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
Volatile Suspended Solids (VSS) **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**	5 mg/L	**$9.20**	$7.36

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
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 - Solid-Phase Gravimetric Method **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
Suspended Sediment Concentration (SSC) **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

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Total Dissolved Solids (TDS) **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
Alkalinity - Potentiometric Titration **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
Total Coliforms and E. Coli using IDEXX Colilert Quanti-Tray/2000 **Protocol ID: 17_13_01** **Sample Container:** Sterile 120mL bottle **Sample Size:** 100 mL **Preservation:** Cool, < 6ºC **Holding Time:** 2 Days **Estimated Turnaround Time:** 2-3 Weeks **Reference:** "IDEXX Colilert-18 Test Kit for the Determination of E.coli and Coliform Bacteria in Water Samples",	**E. coli** **Total coliform**	1 MPN/100mL 1 MPN/100mL	**$25.20**	$20.16

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Specific Gravity **Protocol ID: 17_14_01** **Sample Container:** 20 mL Scintilation Vial **Sample Size:** 10 mL **Preservation:** Pending **Holding Time:** 28 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "USGS-NWQL: I-1312 Density, dissolved, water by gravimetry",	**Specific gravity**	0.1 mg/L	**$12.60**	$10.08
Biological Oxygen Demand (BOD) **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 and Total Chlorine **Protocol ID: 17_16_01** **Sample Container:** 250 mL plastic bottle **Sample Size:** 250 mL **Preservation:** Pending **Holding Time:** 30 Days **Estimated Turnaround Time:** 6-8 Weeks **Reference:** "Standard Methods 4500-Cl G - Chlorine by DPD Colorimetric Method",	**Free chlorine** **Total chlorine**	0.02 ppm 0.02 ppm	**$23.10**	$18.48

Protocol	Analyte	Reporting Limit	Protocol Cost	NU Cost (20% discount)
Anions - Inorganic **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**	0.05 mg/L 0.05 mg/L 0.1 mg/L 0.05 mg/L 0.05 mg/L 0.1 mg/L 0.1 mg/L	**$28.90**	$23.12
Acetate and Formate **Protocol ID: 22_03_01** **Sample Container:** 125 mL polyethylene bottle **Sample Size:** 2 mL **Preservation:** Cool, < 6ºC **Holding Time:** 28 Days **Estimated Turnaround Time:** 2-3 Weeks **References:** (1996), "ASTM: D5996 - Standard Test Method for Measuring Anionic Contaminants in High-Purity Water by On-Line Ion Chromatography", (2001), "Thermo Scientific Technical Note - IonPac AS14 Anion-Exchange Column",	**Acetate** **Chloride** **Fluoride** **Formate**	Pending Pending Pending Pending	**$23.10**	$18.48