Analytical methods approved for use in Regulation 85 nutrient monitoring

The Water Quality Control division has compiled this list for reference and is not considered comprehensive; additional methods may be added if approved by the division or by the federal government. Other approved methods may be found in 40 CFR Section 136. The final column indicates whether the method is also approved for Colorado discharge permitting system (CDPS) reporting (eg., DMR).

Nutrient parameter	Method ID	Method name	Approved for CDPS?
Ammonia-nitrogen/total ammonia	APHA 4500-NH3(C)	Ammonia in water by titrimetric method	yes
NH_3 as N	APHA 4500-NH3(E)	Ammonia in water by selective electrode method (known addition)	yes
NH_3 + NH_4 as N	APHA 4500-NH3(F)	Ammonia in water using phenate method	yes
	APHA 4500-NH3(D)	Ammonia-selective electrode method	yes
	APHA 4500-NH3(G)	Ammonia in water using automated phenate method	yes
	APHA 4500-NH3(H)	Ammonia in water - flow injection analysis	yes
	Hach 10031	Ammonia salicylate method 0.4-50 mg/l	no
	Hach 8038	Ammonia nitrogen in water	yes
	Hach 10205	Ammonia salicylate method	yes
	Lachat 10-107-06-1-J	Ammonia- alkaline phenol-based method	yes
	Lachat 10-107-06-1-K	Ammonia - alkaline phenol-based method; low-flow method	yes
	Lachat 10-107-06-3-D	Ammonia - automated colorimetric (sodium salycilate-based method) - low level	no
	Timberline Ammonia-001	Determination of inorganic ammonia by continuous flow gas diffusion and conductivity cell analysis	Must request ATP from EPA R8
	USGS I-2522-90	Nitrogen, ammonia, colorimetry, salicylate-hypochlorite, automated-segmented flow	no
	USEPA 350.3	Ammonia nitrogen using an ISE	no
	USEPA 350.1	Ammonia nitrogen by colorimetry	yes
Nitrate	APHA 4500-NO3(E)	Nitrate in water- cadmium reduction	yes
NO_3 as N	APHA 4500-NO3(D)	Nitrate in water using an ISE	yes
	Hach 10206	Nitrate, dimethylphenol method	yes
	Lachat 10-107-04-1-A	Determination of nitrate/nitrite in surface and wastewaters by flow injection analysis	yes
	USEPA 300(A)	Inorganic anions by ion chromatography	yes
	USEPA 353.2	Nitrate-nitrite nitrogen by colorimetry	yes
Nitrite	APHA 4500-NO3(E)	Nitrate in water- cadmium reduction	yes
NO_2 as N	APHA 4500-NO2(B)	Nitrite in water by colorimetry	yes
	Hach 10207	Nitrite, diazotization method	yes
	Lachat 10-107-04-1-A	Determination of nitrate/nitrite in surface and wastewaters by flow injection analysis	yes
	USEPA 300(A)	Inorganic anions by ion chromatography	yes
	USEPA 353.2	Nitrate-nitrite nitrogen by colorimetry	yes
Nitrate and nitrite	APHA 4500-NO3(E)	Nitrate in water- cadmium reduction	yes
NO_3 + NO_2 as N	APHA 4500-NO3(F)	Nitrate in water- automated cadmium reduction	yes
	Hach 10206	Nitrate, dimethylphenol method	yes
	Hach 10242	Simplified spectrophotometric measurement of total kjeldahl nitrogen in water and wastewater	yes
	Lachat 10-107-04-1-A	Determination of nitrate/nitrite in surface and wastewaters by flow injection analysis	yes
	Lachat 10-107-04-1-C	Nitrate and nitrite cadmium reduction method	yes
	USGS I-2547-11	Colorimetric determination of nitrate plus nitrite in water by enzymatic reduction	no
	USGS I-2548-11	Nitrate plus nitrite in water by enzymatic reduction, low level, auto analyzer	no
	USEPA 300(A)	Inorganic anions by ion chromatography	yes
	USEPA 353.2	Nitrate-nitrite nitrogen by colorimetry	yes
	calculated value	Nitrate/nitrite value calculated from the difference between TIN and NH_3 analyses	refer to components
	calculated value	Nitrate/nitrite value calculated from the sum of NO_3 and NO_2 analyses	refer to components

Nutrient parameter	Method ID	Method name	Approved for CDPS?
Total inorganic nitrogen	APHA 4500-N-D	Conductimetric determination of inorganic nitrogen	no
TIN as N	calculated value	Total inorganic nitrogen calculated from sum of NO_3 +NO_2 + NH_3	refer to components
Total Kjeldahl nitrogen	APHA 4500-NOR(B)	Total kjeldahl nitrogen in water	yes
TKN as N	APHA 4500-NORG D	Block digestion and flow injection analysis	yes
	ASTM D3590(B)	Total kjeldahl nitrogen by autoanalyzer	yes
	Hach 10242	Simplified spectrophotometric measurement of total kjeldahl nitrogen in water and wastewater	yes
	Lachat 10-107-06-2-M	Kjeldahl nitrogen with copper catalyst	yes
	USGS I-2515-91	Ammonium plus organic nitrogen, dissolved	no
	USGS I-4515-91	Ammonium plus organic nitrogen, total	yes
	USEPA 351.2	Total kjeldahl nitrogen by colorimetry	yes
	USEPA 351.3(A)	Total kjeldahl nitrogen by titration	no
	calculated value	Total kjeldahl nitrogen calculated as the difference between TN and NO_3/NO_2 analyses	refer to components
Total nitrogen	APHA 4500-N-C	Persulfate method for total nitrogen	no
TN as N	Hach 10208	Nitrogen, total persulfate digestion method	no
	Hach 10242	Simplified spectrophotometric measurement of total kjeldahl nitrogen in water and wastewater	yes
	Lachat 10-107-04-3-P	Total nitrogen by in-line uv/persulfate digestion and oxidation with flow injection analysis	no
	Lachat 10-107-04-4-A	Total nitrogen; manual alkaline persulfate digestion; low-flow method. cadmium reduction. sulfanilamide/ned 520nm.	no
	Lachat 10-107-04-4-B	Total nitrogen using persulfate block digestion and cadmium reduction	no
	LaMotte 4026-01	Chromotropic acid with persulfate block digestion method	no
	USGS I-4650-03	Nitrogen and phosphorus, total, whole-water, alkaline persulfate digest	no
	USEPA 351.3(A)	Total kjeldahl nitrogen by titration	no
	USEPA 440	Elemental C and N by combustion and thermal conductivity	no
	calculated value	Total nitrogen calculated from sum of TKN and NO_3/NO_2 analyses	refer to components
Total Phosphorus	APHA 4500-P-F	Phosphorus in water by colorimetry automated ascorbic acid method	yes
TP as P	APHA 4500-P-H	Manual digestion and flow injection analysis for total phosphorus	yes
	APHA 4500-P-D	Phosphorus in water by stannous chloride titration	no
	APHA 4500-P-E	Phosphorus in water by colorimetry- ascorbic acid method	yes
	ASTM D515(B)	Phosphorus in water by digestion/colorimetric reduction	yes
	Hach 10210	Phosphorus, total ascorbic acid method	yes
	Hach 8190	Total phosphorus in water	yes
	Lachat 10-115-01-1-F	Total phosphorus- manual persulfate digest	yes
	Lachat 10-115-01-2-B	Kjeldahl phosphorus with copper catalyst	yes
	Lachat 10-115-01-4-B	Total phosphorus by block digestion and flow injection analysis (molybdate-based method) - low level	no
	LaMotte 4024-01	Ascorbic acid reduction with persulfate digestion method	no
	USGS I-4650-03	Nitrogen and phosphorus, total, whole-water, alkaline persulfate digest	no
	USEPA 200.7(W)	Metals in water by ICP-AES	yes
	USEPA 365.1	Phosphorus by colorimetry	yes
	USEPA 365.2	Phosphorus by single reagent colorimetry	no
	USEPA 365.3	Phosphorus by two reagent colorimetry	yes

For questions about methods, or to request approval of a method not listed, please email CDPHE_nutrients@state.co.us.