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U.S. GEOLOGICAL SURVEY

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NATIONAL WATER QUALITY LABORATORY TECHNICAL MEMORANDUM 1997.10

June 20, 1997

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From: Peter F. Rogerson, Chief
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Subject: Change in Ammonia Minimum Reporting Limit

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Revision: None

Supplemental: None

SCOPE

This technical memorandum pertains to changes in the minimum reporting limit (MRL) for dissolved ammonia nitrogen in chilled and chilled-acidified samples (see table below), effective October 1, 1997. Specifically it announces a change in the MRL for these tests from 0.015 milligrams of nitrogen per liter (mg-N/L) to 0.02 mg-N/L.

Lab Code	Parameter Code	Procedure Name	Bottle Type	MRL mg-N/L
1976	608 F	Colorimetry, ASF, salicylate-hypochlorite, N, Ammonia, FIL	FCC	0.015
1991	608 G	Colorimetry, ASF, salicylate-hypochlorite, N, Ammonia, FIL, acidified	FCA	0.015

BACKGROUND

The rationale for this change is outlined below, along with a summary of events that led to an inadvertent change in the MRL for these tests that occurred on October 1, 1994.

On October 1, 1994, the U.S. Geological Survey discontinued the practice of adding mercuric chloride to samples collected for nutrient analysis as announced and discussed in National Water Quality Laboratory (NWQL) Technical Memorandum 94.16. Up to that time, the MRL stated for these tests in NWQL analytical services catalogs and in Techniques for Water Resources Investigations (TWRI) methods was 0.01 mg-N/L. However, when new laboratory codes were created to document this change in field processing protocol, the MRL for these tests was changed to 0.015 mg-N/L by mistake. Note that this is the concentration of the lowest standard used to calibrate these tests at the NWQL, at least as far back as 1989. Because of this inadvertent MRL change, the lowest concentration of ammonia reported between October 1, 1994, and September 30, 1997, is 0.015 mg-N/L.

This inadvertent increase in the MRL for these tests was actually fortuitous, because blind blank data and method detection limit estimates collected over the past 3 years indicate that an MRL of 0.015 mg-N/L is a more accurate reflection of data quality. An MRL of 0.015 mg-N/L, however, invites the assumption that ammonia concentrations greater than 0.015 mg-N/L are reliable to three decimal places, which clearly exceeds the analytical capabilities of these methods. For this reason, the established reporting convention for these tests--two decimal places for concentrations up to 0.99 mg-N/L and two significant figures for concentrations greater than or equal to 1.0 mg-N/L--has been retained. On October 1, 1997, the MRL for these tests will change to 0.02 mg-N/L. Data for these tests released prior to that date will not be modified, but we suggest that concentration values of < 0.01 mg-N/L, 0.01 mg-N/L, and < 0.015 mg-N/L be interpreted as < 0.02 mg-N/L.

Impact on Data Base: Interpretive only--see narrative

Key words: ammonia, MRL

Supersedes: None

Distribution: See above plus the Netnews usgs.labnews and .water.quality, WRD Secretaries; Field and Project Offices; Hydrologic Technicians; and <http://www.nwql.cr.usgs.gov/>