

*Memorandum*  
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DATE: 31 May 1983

FROM: Supervisory Chemist, Quality Control Lab, Environmental Branch, NREAN

TO: Director, NREAD

SUBJ: Inorganic Chemicals, Corrosivity, and Trihalomethane Analysis Information

Ref: (a) Rules Governing Public Water Supplies Sections .0600--.2500 of NCAC Title 10, Chapter 10, Subchapter 10D.

1. The Safe Drinking Water Act and Reference (a) requires that certain inorganic (anything not containing Carbon) chemicals be monitored. Analysis is required every three years for ground water systems. The chemicals that are required are listed below with their respective maximum allowable level.

Arsenic	0.05ppm	Chromium	0.05ppm	Nitrate(as N)	10ppm
Barium	1.0ppm	Lead	0.05ppm	Selenium	0.01ppm
Cadmium	0.010ppm	Mercury	0.002ppm	Silver	0.05ppm

Fluoride is also required but its maximum allowable level is based on the annual average of the maximum daily air temperature.

2. Iron is required by paragraph .1619 of Reference (a). Paragraph .1619 states that any community system with iron concentrations in excess of 0.30 mg/l shall provide approved treatment.

3. Manganese is required by paragraph .1620 of Reference (a). Paragraph .1620 states that any community system with manganese concentrations in excess of 0.05 mg/l shall provide approved treatment.

4. In February 1982, EPA and the State of North Carolina added Sodium to the list of inorganic chemicals for monitoring, however, no limit has been accepted. It was proposed, at one point, to set the limit at 20ppm.

5. Also in February 1982, EPA and the State of North Carolina added a regulation covering corrosion control. The regulation (paragraph .1821 of Reference (a)) requires all systems to analyze for corrosivity characteristics by February 1983. The Langelier Stability Index is a mathematical determination of the corrosivity of the water. A positive value indicates a tendency to form scale in the distribution system. A negative value indicates a tendency to dissolve scale and become corrosive. Along with the results, the regulations state that a summary of construction materials used in each distribution system must be provided.

6. Trihalomethanes are required to be analyzed quarterly for systems serving greater than 10,000 (Hadnot Point & MCAS-New River) by paragraph .1635 of Reference (a). The maximum allowable level of total trihalomethanes is 0.10ppm or 100ppbs as a running annual average.

7. In summary, the only level exceeding limits is iron in five systems. If the 20 ppm limit is ever accepted all but one system would be in non-compliance. We have four systems showing a slight tendency to be corrosive. As for Trihalomethanes, we have one system that is very close to the limit.

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