COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Water Division

Subject: Guidance Memorandum No. 96-009 - Amendment #2
Obtaining Dissolved Metals Data

To: Regional Directors

From: Larry G. Lawson, P.E., Director

Date: April 10, 2003

Copies: Regional Water Permit Managers, Regional Compliance/Enforcement Managers, Regional Water Compliance Managers, Martin Ferguson, Roger Stewart, Jon van Soestbergen, Kathleen O'Connell, Bill Purcell, and Betsy Ziomek

Dissolved Metals Sampling

Guidance Memorandum No. 96-009 "Obtaining Dissolved Metals Data" was written to cover the collection of both total recoverable and dissolved metals. Sampling procedures for dissolved metals in compliance wastewater samples must also adhere to the requirements found in 40 CFR, Part 136. *Table II - Required Containers, Preservation Techniques and Holding Times*, footnote #7 states: "Samples should be filtered immediately on-site before adding preservative for dissolved metals." Footnote #4 defines 'immediately' as within 15 minutes or less of sample collection. The reason for the extremely short holding time is that metals can change "state" (dissolved versus filterable) upon exposure to air. Once the sample is filtered and preserved, the "state" is stabilized and the sample may be held for six months.

A standard 24-hr. compositor is inappropriate for the collection of compliance dissolved metals samples because the sample aliquots would be exposed to air for longer than 15 minutes prior to being filtered. If an automatic compositor is to be used, each aliquot must be filtered as it is collected. If multiple grabs are required by the permit, each grab should be immediately filtered and preserved. Properly collected multiple-grabs from the same outfall and on the same day may be analyzed as a single sample if they are properly composited in the laboratory.

For sample preservation, the memo requires that after preservation to pH <2, the "…sample(s) must remain in the original container for a minimum of 18 hours prior to digestion or analysis." This applies to dissolved metals only if the filtered sample was not immediately preserved to pH <2. The 18-hour waiting period helps to ensure that any metals that may fall out of solution will go back into solution prior to analysis.