



**Office of Water Quality Water-Quality Information Note 2003.04**

**Subject: Field Methods**—Disposable gloves for water-quality field work

**Water-quality specialists, please forward this important reminder to all your personnel engaged in water-quality activities.**

**TO ALL WATER-QUALITY FIELD PERSONNEL --**

The Office of Water Quality (OWQ) has been responding to questions and suggestions from the field regarding the powderless nitrile gloves that are worn when field teams are engaged in sampling-related activities. The nitrile gloves currently being supplied by the Ocala Water-Quality and Research Laboratory (OWQRL) are rated as "highly resistant" to each of the chemical preservatives used for sample preservation and to the dilute hydrochloric acid and methanol used for equipment cleaning. Nitrile was chosen because of latex-allergy concerns and because vinyl gloves are not resistant to methanol or other organic solvents.

Recent testing on different brands of nitrile gloves commonly used in the field and laboratory indicates that all of these gloves (whether white, colored, or 'pigment-free') release measurable concentrations of a variety of trace elements (most notably Zinc) when soaked in deionized water or exposed to acid solutions. Despite this, OWQ is not aware of any quality-control data, in field sampling or laboratory operations, suggesting systematic contamination due to use of nitrile gloves when handling samples or sampling equipment.

**The instructions in the National Field Manual\* (NFM) expressly state that although gloves must be worn during the sampling process, the water sample collected for analysis is never to come in contact with the gloved hands. The purpose of wearing these gloves is for the protection of field personnel and as a reminder to be alert to sources of sample contamination. WaQI Note 2003.04 is a reminder to be alert to how you handle your samples and equipment during collection and preservation. Remember:**

- **THE SAMPLE ENTERING THE SAMPLE BOTTLE MUST NOT COME INTO CONTACT WITH YOUR HANDS NOR TOUCH ANY OTHER POTENTIALLY CONTAMINATING SURFACE.**
- **CHANGE GLOVES WITH EACH PROCEDURE CHANGE, AS SPECIFIED IN THE NFM. IMMEDIATELY REMOVE AND DISCARD GLOVES THAT HAVE COME INTO DIRECT CONTACT WITH ACID OR SOLVENT WHILE CLEANING EQUIPMENT OR ENGAGING IN SAMPLE-COLLECTION, -PROCESSING, AND -PRESERVATION ACTIVITIES.**
- **WHEN ACID-RINSING EQUIPMENT, USE NON-METALLIC TONGS TO HANDLE EQUIPMENT WHEREVER PRACTICAL TO PREVENT DIRECT CONTACT OF GLOVED HANDS WITH THE ACID SOLUTION.**

\* (See National Field Manual for the Collection of Water-Quality Data, Chapter 4, Tables 4-1 and 4-2, within sections 4.0 and 4.1 of the NFM. Current links to these sections are:

<http://water.usgs.gov/owq/FieldManual/chapter4/html/4.0.html> and  
<http://water.usgs.gov/owq/FieldManual/chapter4/html/4.0.1.html>).