March 25, 2003

OWQ WaQI Note

Office of Water Quality Water-Quality Information Note 2003.02

Subject: Field Methods—Use of methanol

Methanol rinse is currently part of the standard protocol for cleaning equipment that contacts samples for analysis of anthropogenic organic compounds (see Chapter 3 of the National Field Manual (NFM)). Version 1.01 of NFM 3 is now available at:
http://water.usgs.gov/owq/FieldManual/index.html
The ".01" version designation indicates that a relatively minor change was made to the original text. In the new chapter, any statement to the effect that the methanol rinse step is under review has been removed because it has been misconstrued by some personnel to mean that the methanol rinse is an optional part of the equipment-decontamination protocol that is in place. All water-quality field personnel are reminded: (1) the methanol rinse still is stipulated for cleaning of equipment to be used for sampling pesticides and other organic compounds; (2) any deviation from this or other standard USGS procedure related to water-sampling activities requires collection and analysis of sufficient additional QC samples to substantiate that sample quality has not been compromised and the publication of the resulting QC data and analysis; and **(3) methanol or other organic solvent must be handled with extreme caution and according to specific regulations, as described in NFM 3 and spelled out in** http://water.usgs.gov/admin/memo/WRD/wrdpolicy94.007.html .

PLEASE BE ALERT TO THE FOLLOWING REQUIREMENTS, EXCERPTED FROM THE WRD TECHNICAL MEMORANDUM LINKED ABOVE:
Methanol (methyl alcohol) is highly flammable and should be considered a fire and explosion hazard.

Toxicity - Prolonged or repeated exposure may result in respiratory impairment and bronchitis, defatting of skin, and conjunctivitis. Methyl alcohol is considered to have poor warning properties since the odor threshold (100 ppm) is below the permissible exposure limit (PEL) of 200 ppm. Short-term exposure limit (15 min.) recommended by the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) is 250 ppm.

Field handling and use - Because of the potential to release toxic, flammable, and explosive vapors, methyl alcohol should never be opened, mixed, or transferred to other containers at any time while inside a vehicle. A Materials Safety Data Sheet (MSDS) should be in the possession of those working with this chemical at all times.

Transportation - Methyl alcohol should be **transported only in its original container**, fully labeled and stored properly within the vehicle to prevent shifting, spillage, or breakage. A cardboard or plastic overpack with a chemical sorbent pad is recommended. Containers of methyl alcohol carried in vehicles in warm climates **should be placed in a cooler** to protect them from excessive heat. Methyl alcohol has a boiling point of 65 degrees C (149 degrees F) and should be transported at a moderate temperature to minimize the build-up of vapor pressure in the container. **Closed containers of methyl alcohol exposed to heat may explode.**

Contingency Spills and Response - During operational use, transportation, and wherever an accidental spill is likely to occur, each field unit should have, as part of their required emergency equipment, sufficient absorbent material to handle small spills. Sand can also be used as an absorbent. Methyl alcohol should **never be allowed to volatilize as a means of clean up**; if the spill has become too large to properly contain, water in flooding amounts as a fog can be used to prevent explosion or fire until clean up can be implemented. **Due to toxic fumes, stay upwind of spill.**