EPA Biosolids Update-From Rick Stevens

Following are a few of the items that EPA is working on in 2012 with regard to biosolids:

- **We are continuing to evaluate risk for ten pollutants (i.e., Barium, Beryllium, Manganese, silver, fluoranthene, pyrene, 4-chloroaniline, nitrate, nitrite, and molybdenum):** The draft risk assessment is being reviewed by management. We expect peer review (e.g., W2170 Committee) by September 2012, depending on funding and appropriate priority assignment.

  We are at a stand-still for the balance of the 135 TNSSS pollutants, and await funding to continue evaluating these compounds.

- **We are continuing to improve the Biosolids Core Risk Assessment Model (BCRAM):** For example, development of a more flexible compartmental land application model will include a biosolids-specific land application source model that will replace the existing 3MRA LAU model. It will optimize performance and incorporate information on the specific chemistries of emerging pollutants (e.g., PFCs). The compartmental model will also allow greater flexibility in setting variable application rates and tracking nutrient loads to ensure that the model does not violate basic application principles. This latter feature will be particularly important as we develop the ability to vary both pollutant concentrations in biosolids as well as application rates.

- **Other enhancements to BCRAM include the development of biosolids database algorithms:** Concurrent with developing and updating the biosolids chemical-physical property database being utilized under multiple projects, we are developing efficient algorithms for five general purposes or activities: (1) executing user-specified hierarchies for the selection of values such as human health benchmarks, (2) identifying available data on new pollutants and determining which exposure pathways can be modeled, (3) incorporating GIS information into the database to support spatial analyses and model reproducibility, (4) evaluate the sufficiency of chemical-specific data and, as appropriate, use those data to suggest exposure pathways of greatest concern, and (5) improving upon the transparency in the development of supporting data.

- **We are working on technical support for incineration risk assessments**: For the sewage sludge incinerator scenario and management option, we will be evaluating risks for up to 145 previously identified pollutants that were analyzed for the Targeted National Sewage Sludge Survey. EPA assumes that the modeled reasonable maximum exposure receptor resides and inhales ambient air in the shadow of a sewage sludge incinerator's emissions plume.

- **We are writing a summary of results for the Biennial Review Cycle 2011:** The purpose of this task is to identify pollutants in biosolids / sewage sludge that have sufficient data

to allow an evaluation of risk to humans and/or the environment. We conducted a literature search for chemical and microbial pollutants found in U.S. sewage sludge and will write up a summary of results.

- **Update the 1999 Biosolids Management Handbook**. We are attempting to update EPA's Biosolids Management Handbook (http://www.epa.gov/region8/water/biosolids/documents.html). The product will be an updated "easy-to-read" summary information related to Federal Part 503 regulations (including guidance for implementing 40 CFR 503), compliance issues (e.g., approved analytical methods, vector attraction reduction methods, sampling guidance for POTWs, and criteria for municipal solid waste landfills), calculations needed to determine compliance with 40 CFR Part 503 (e.g., determining percent total solids on a dry weight basis, annual whole sludge application rate, application rates for domestic septage, and volatile solids reduction), and responsibility for ensuring that approved analytical methods are followed and accurate reports are generated.

  The updated Handbook will take into consideration improvements in biosolids quality, as well as improvements made in equipment, processes, and management practices, making sure that the Handbook is consistent with existing and future biosolids management trends. This project is pending further funding.

- **We are developing Screening Methodologies:** We are developing a chemical screening methodology to identify and prioritize chemicals in terms of their relative likelihood of occurring in biosolids, as well as developing conservative human and ecological exposure and risk calculation methodologies that can serve as "first-tier" or screening-level assessments, in order to eliminate from more detailed consideration contaminants that are unlikely to pose significant risks. Implementing a tiered approach will allow prioritization of limited Agency resources to focus on contaminants that are more likely to pose hazards to human health, and exposed aquatic, avian and terrestrial species.