



MEETING MINUTES

**Sustainable Lab Practices Working Group
NIH Environmental Management System (NEMS)
Wednesday, October 15, 2008
1:30 – 2:30 pm**

Meeting Objective(s):

- Provide update on the status of the NEMS
- Provide update on the status of NIH Target Chemicals Ranking
- Determine strategy for communicating information on target chemicals

Attendees:

Dan Appella (NIDDK)
Jane Clarke (NIA)
Kristen Peters (Booz Allen)
Barbara Ploplis (NIDCD)
John Prom (ORF)
Wendy Rubin (ORS)

Ronda Sapp (NIDDK)
Linda Thompson (Booz Allen)
William Trenkle (NIDDK)
Roger Weidner (ORF)
Don Wilson (ORF)

Minutes:

NEMS Update

Linda Thompson provided an update on the current activities of the NIH Environmental Management System (NEMS). She showed the group the first issue of the new bimonthly newsletter NEMS News, featured on the homepage of the NEMS website (see <http://nems.nih.gov/index.cfm>). She also reminded the group about the mandatory NEMS Awareness training (<http://nems.nih.gov/training/index.cfm>) in preparation for the internal audit coming up in mid-November. Lastly, the group discussed last month's presentation from Sigma-Aldrich.

Status of Target Chemicals List

Linda Thompson showed the group the latest Target Chemicals Ranking List, which currently has 17 chemicals in Tier 1 and 5 chemicals in Tier 2 with various uses and alternatives. The group decided to focus on just a few chemicals from this list and start to communicate our message to NIH.

Strategy for Communicating Target Chemical Reduction Effort

Linda Thompson started the discussion by asking who the best audience for a communication awareness strategy might be – NIH-wide, by lab type, or by I/C. Don Wilson stated that general outreach needs to be done first, where we explain our efforts and use the larger target chemicals ranking list described above. John Prom explained that he can access exactly which labs disposed of each of the various waste chemicals. He and Don Wilson were thinking of contacting these labs and providing them with outreach materials on how to reduce these wastes or use alternative chemicals and processes.

Linda Thompson then asked what was the best method for communicating our message – pamphlets, posters, briefings, emails, etc. Dan Appella said that none of these methods truly work. The best method is personal visits, although the group also discussed using the website for overall outreach.

The group then discussed how to focus on a few chemicals – based on volume, toxicity, or number of alternatives. The highest volume chemicals are acetonitrile and methanol, but they are not necessarily the most toxic chemicals. The issue with these chemicals is really more a delivery and safety issue given the large quantities of waste. In the end, the group decided that methanol and acetonitrile were too difficult to tackle at this time because they lack good alternatives. However, a group member pointed out that new capillary columns are available that reduce flow rates and times for analytical HPLC. Preparatory HPLC is hard to avoid using large solvent volumes.

William Trenkle said that he had researched reusable containers in the past and that there were several issues with this method: (1) the large reservoirs need special containment in the case of accidents or spills, (2) the refill time along the supply chain was unacceptable for research labs, and (3) the cost was prohibitive (\$1200/vessel), plus costs to ship the reservoir back, with no discounts. While this research was done in the mid-90s with Fischer Scientific, when he asked Sigma Aldrich if these issues had been resolved, they were unable to provide answers. A member of the group suggested sharing the reusable containers between I/Cs, but coordination between the I/Cs would be too difficult.

Jane Clarke explained NIA uses a single repository for reusable gas cylinders that works well. Unfortunately, there is less space at the BRC now, so she is unsure if they will be able to continue this practice. *She also pointed out that NIH regulations state not to purchase chemicals that cannot be used within 6 months.* (See page 7 of the NIH Chemical Hygiene Plan available at [http://dohs.ors.od.nih.gov/pdf/NIH-Chemical_Hygiene_Plan_2007_\(final\).pdf](http://dohs.ors.od.nih.gov/pdf/NIH-Chemical_Hygiene_Plan_2007_(final).pdf))

Picric acid, ethidium bromide, and xylene are all fairly toxic chemicals with good known alternatives. William Trenkle also added that no one should be using chromic acid because there are so many good alternatives. Jane Clarke mentioned that there is a published paper on picric acid alternatives, which would have a big impact on lab

people. Phenol or phenol/chloroform was also discussed as having good alternatives for DNA extraction lists. Also, ethylene oxide is used as a disinfectant in animal labs, and should have viable alternatives.

Roger Weidner said he would forward on an article from Washington State on various alternative equipment and processes.

In conclusion, the group decided to first focus on the following chemicals:

- chromic acid
- phosphoric acid
- picric acid
- ethidium bromide
- ethylene oxide
- phenol/chloroform

We will target specific labs and I/Cs that are disposing of these chemicals, based on data John Prom will obtain. The next step is to discuss how to visit these labs personally, and develop appropriate outreach materials. We will research peer-reviewed published articles on alternative chemicals and processes, while trying to avoid promotional brochures from companies.

Action Items:

Action Item	Responsible Person(s)	Due Date
1. Research which labs are disposing of the six focus chemicals listed above	John Prom	November 14, 2008
2. Research articles comparing alternatives for the six focus chemicals listed above	Linda Thompson	November 14, 2008

Next Meeting:

The next meeting is scheduled for Wednesday, November 19, from 1:30 to 2:30 PM in Building 50, Room 1328/1334.