THE ENVIRONMENTAL COUNCIL OF THE STATES

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REPORT OF THE ECOS MERCURY WORKSHOP

Volume I

St. Louis, Missouri
October 18-20, 2000

ECOS
MERCURY WORKSHOP
OCTOBER 18-20, 2000

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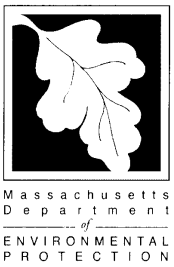

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FORWORD

ECOS is the national, non-partisan, non-profit, association of State and territorial environmental commissioners. Our mission is to improve the environment of the United States by providing for the exchange of ideas, views, and experiences among the States; by fostering cooperation and coordination in environmental management; and by articulating State positions to Congress and EPA on environmental issues.

This report provides an overview of the ECOS Mercury Workshop. During the workshop, the participants and speakers:

- Shared the most current information on the science of the mercury problem in the United States with our commissioners and upper level state managers,
- Learned what the federal government, our states, and others were doing to address the problem, and
- Discussed actions that ECOS and individual States, alone and in partnership with others, might undertake to reduce mercury entering the environment.

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ECOS Mercury Workshop Summary
OCTOBER 2000

OVERVIEW

The ECOS-sponsored Mercury Workshop was held on October 19 and 20, 2000 at the Adam's Mark Hotel in Saint Louis, Missouri. ECOS organized the first day of the workshop to further educate and inform State environmental decision-makers about the mercury problem in the United States, the current policies designed to deal with mercury, existing and emerging technologies to reduce mercury in the environment and how states are currently dealing with mercury. This section of the workshop report:

- Highlights the key points from the October 19 educational meeting and the "next steps" discussion that occurred on October 20 between State environmental agency commissioners and technology and policy directors.
- Identifies action items that emerged from the discussion for ECOS.

PARTICIPATION

Ninety environmental agency commissioners, technical staff, federal and local officials, industry representatives and public interest groups met on October 19 while approximately 50 State agency staff and commissioners attended the second day of the mercury workshop. In addition, there was an agency representative from Canada as well as from Sweden, who each shared experience in mercury pollution reduction activities of their respective countries. Bob Perciasepe, EPA Office of Water Assistant Administrator, spoke at the October 19th dinner meeting about EPA's activities pertaining to mercury, particularly EPA's pending decision to regulate mercury emissions from utility boilers.

DAY 1 -- LEARNING ABOUT MERCURY (OCTOBER 19)

The following highlights of Day 1 (October 19) where experts provided an overview of the mercury problem, U.S. policy, technology and State activities. These sessions were used to inform the second-day "next steps" meeting. This section is not meant to be a comprehensive review of the presentations, but is a brief summary of speakers' main points. These highlights are organized to correspond to the four sessions.

Session 1 -- Science of the Mercury Problem Overview

- Mercury is a dangerous toxin, especially damaging to children and fetuses, the effects of which we do not fully understand yet
- Mercury levels that we know are not protective of fetuses are routinely found in people who eat fish from certain areas (e.g., Great Lakes)
- Gas-phase mercury in urban areas interacts with particulate matter and falls out of the air quickly—it is not dispersed as far as previously thought
- Mercury in fish may have disproportionate effects on low economic status groups who are dependent on fish in their diet

Session 1 -- Science of the Mercury Problem Overview (continued)

- Many important questions about mercury are currently being addressed through scientific research such as: how quickly will mercury concentrations in fish decline after emissions controls are in place (depends on how "old mercury" contributes to concentrations) and what is the relationship between the deposition rate and mercury concentration in fish?
- Important sources of mercury depend on your location: There is a much higher contribution of mercury from municipal waste incinerators (MWIs) than coal-fired utility boilers in Florida, and a higher contribution from utility boilers in the Great Lakes
- The most important sources of mercury are local and regional
- Speciation of mercury is critical to determine where it is going and what it is doing—this is an important area in the study of mercury
- Deposition can be traced to individual sources
- Most progress in reducing mercury pollution will be made with local and regional reductions

Session 2 -- US Policy Overview

- Challenges to States:
  - Encourage every state with mercury fish consumption advisories to develop mercury reduction plans with targets and specific actions
  - Encourage coordination on fish consumption advisories
- Work to strengthen mercury water quality criteria
- New mercury loadings to waterbodies are mainly from air deposition
- 60% of mercury in U.S. waters comes from current anthropogenic uses
- Most mercury sources will be regulated in the next few years and EPA is currently making a finding about whether utilities should be regulated
- Fish advisories are and will be a very important public health tool (emissions will significantly decrease in the future, but mercury will still be in the water)
- There are efficiencies to be gained by developing ways of reducing pollutants in concert, i.e., a multi-pollutant strategy
- The next Congress will be looking at a multi-pollution reduction scheme: there is a lot of bipartisan interest
- EPA will most likely go forward with a proposed rule to regulate mercury emissions from utilities
- Mercury trading is a real environmental justice concern because it can significantly affect local communities

Session 3 -- Existing and Emerging Technologies to Reduce Mercury to the Environment

- Technology and innovation are driven by environmental regulation
- Control technologies do not become commercially available at attractive prices until after regulatory drivers are established
- There is a need to have regulation of utility boilers in order to drive emissions controls innovation
- Mercury emissions from coal-fired plants contribute to one third of U.S. anthropogenic emissions

Session 3 -- Existing and Emerging Technologies to Reduce Mercury to the Environment (continued)

- Mercury-control technologies utilizing existing air-control technologies are currently under development, but there is a long way to go (especially in developing cost-effective technologies)
- Medical waste incinerators are the fourth largest known source of mercury emissions to the environment
- Non-mercury alternatives are readily available for most mercury-containing devices in hospitals, thus mercury-free hospitals are possible
- Sweden is currently looking for a solution for terminal disposal because of its no-mercury-export policy
- Sweden's proposal for terminal disposal is a deep rock repository--they will convert the mercury into a stable form and put it in a geologically stable environment with low water flow (could be an abandoned mine that has low ore potential)
- It is important to find solutions with stakeholders

Session 4 -- State Programs to Address Mercury

- The eight Great Lakes states have no formal organization, but they communicate through EPA Region 5 and have developed similar programs
- More inter-state collaboration should occur--the question is how to do it most effectively
- Minnesota mercury emissions due to purposeful use have greatly declined while emissions incidental to energy and materials production has remained static, thus current programs targeting purposeful use are highly successful
- Common Great Lakes activities are: research and monitoring; production collection and disposal; TMDLs; communication; air quality permits; "voluntary" programs
- Popular Great Lakes programs include: schools, hospitals, auto switches, natural gas regulators, and collection/outreach programs
- There has been much success in the Great Lakes states with the voluntary agreement process with industries
- Minnesota would like to promote a federal mercury stockpile program
- There is little public awareness of mercury—labeling would be very useful
- A multi-state approach is very effective towards reducing emissions--the New England Governors-Eastern Canadian Premiers Mercury Action plan is a good model for other efforts
- Because of long range transport of mercury, all states need to aggressively address the mercury issue
- Northeast Waste Management Officers' Association (NEWMOA) model legislation is a comprehensive model designed to aggressively pursue virtual elimination
- NEWMOA's model legislation promotes consistency across states and allows a state to choose components of the legislation such as: establishment of an interstate clearinghouse, proposed notification of mercury content in products, restrictions on some mercury use (e.g., jewelry, apparel, fever thermometers, K-12 use, dairy manometers), phase-out and exemptions, labeling program, disposal ban, and collection system ban

Session 4 -- State Programs to Address (continued)

- ECOS should look at the NEWMOA model legislation and make sure others are aware of it
- The Southern States Mercury Task Force (SSMTF) is a multi-state, multi-agency group that focuses on fish contamination and advisories, risk communication, ecological issues, sources, transport and deposition, and remedial approaches to reducing mercury pollution
- The fish advisory system was not designed to drive the TMDL regulatory approach—currently the SSMTF is moving towards risk-based fish advisories
- New Jersey's overall mercury management approach has been very successful. The state's strategy includes working on national/regional reduction strategies; developing a state-wide mercury inventory, setting state-wide reduction goals and applying reduction strategies; reaching out to potentially exposed populations; conducting research on mercury speciation, fate, transfer and exposure; and tracking progress towards goals with environmental indicators.
- "Lessons learned" from development of the mercury TMDL in California: regional monitoring is very important to solving mercury pollution problems; building partnerships between regulating agencies, the regulated community and environmental advocates is key; air deposition is a global problem that requires everyone to do their part; and, newly mined mercury is too inexpensive—we must do something to address this issue

DAY 2 -- STATES "NEXT STEPS" DISCUSSION (OCTOBER 20)

Bill Ross, Ross & Associates Environmental Consulting, Ltd., facilitated the states-only "next steps" discussion on the second day of the workshop. The purpose of this discussion was to determine if there was concerted action that should be set in motion by States, to decide who would be responsible for taking action, and to develop suggestions for ECOS consideration.

The following agenda, designed to mirror major issues that arose on the first day of the workshop, was used to guide the discussion.

Agenda

I. Nationally Focused Items	***II. State Focused Items***

• International issues
• Mercury Retirement
• Energy/utility boilers
	• Regional Collaboration
	  o Fish Advisories
	  o TMDLs
	• Shared Learning
	• Multi-Pollutant Strategy

I. *Nationally Focused Items*

International Issues

The group expressed a desire for EPA to take leadership on making progress in reducing mercury pollution on an international scale. EPA should learn from the states' activities and listen to their perspectives on how to deal with the mercury problem in order to understand the states' role in a global sense. States have the ability to act on a local and regional level, but do not have direct responsibility to engage global issues. The problem is also compounded by the fact that there is not enough knowledge about the global cycle of mercury.

One attendee noted that EPA is already working on the international scene and that states should communicate with EPA. Canada and the United States are involved in international strategies and forums such as the UN POPS, the Arctic Strategy, North American Commission for Economic Cooperation, European Economic Community and the Organization for Economic Cooperation and Development. States should also encourage EPA to develop a long-term strategic plan for mercury.

The group agreed that there is a need for the federal government to articulate and share with the world a vision for the future regarding phasing out of mercury mining, curtailing mercury use, and finding a secure repository for reclaimed mercury. The cost to citizens of the mercury problem justifies putting this issue on the international level. Currently, there is no federal policy relating to mercury, therefore states should push the federal government to develop a global mercury strategy. Some attendees felt that ECOS, through governors, should recommend to Congress that there be national efforts to ban certain mercury-containing products and to link this ban to trade.

The group decided to ask the ECOS Air and Water committees to work on a resolution to present to the President and Congress that articulates a need for a global mercury strategy designed to accomplish virtual elimination of mercury at the national and international level with an emphasis on initiating mercury research and an acknowledgement of the states' role. States should also seek out opportunities to share their experiences and mercury reduction strategies with each other as well as with other countries.

Once the resolution is delivered, the group felt that it is important for ECOS to educate and engage senior management in several other agencies (e.g., health agencies and the Natural Resources Committee of the National Governor's Association) as well as environmental groups, the general public and industry. This effort should be inclusive and emphasize shared responsibility and may be done through broad outreach and additional forums.

Mercury Retirement

There was discussion about what states' positions should be when large quantities of mercury become available and may be put on the open market. Mercury retirement is becoming a bigger issue as chlor alkali plants close down and other efforts to remove mercury from circulation result in mercury stockpiles. The cost involved in retiring mercury in mass quantities, such as from a chlor alkali plant, is significantly less than the cost of collecting mercury-containing items such as thermometers or batteries. In addition, several cost-effective options exist for storing the mercury. More important than the short-term acquisition and storage issue is the long-term retirement issue. States should not get into a protracted discussion about the short term because it is easily resolvable. However, it is important that states take a unified position on the long-term strategy in order to avoid future disputes.

The uncertainty surrounding the retirement issue is whether this is a federal or state responsibility. When mercury is purchased and inserted into the product stream, many states are affected, thus, argued some, mercury retirement is a federal issue. There was discussion about whether states should purchase the mercury and store it in the short term. The group agreed to start a dialogue with the Department of Energy (DOE) and/or the Department of Defense (DOD) to discuss how to deal with both short and long-term mercury storage/retirement.

The mercury retirement issue is a good way to begin the discussion at the federal level about the United States' global vision. Until mercury mining stops worldwide, retirement is not going to be totally successful because the mercury that is retired will be replaced in the marketplace by newly mined mercury. Retirement and supply/demand reductions need to occur simultaneously—this is a critical component of the global strategy. There is a fear that eliminating mercury from the marketplace through retirement will merely build incentives for more mining on an international basis. Mercury should be classified as a commodity with strict regulations on it in global trade. One difficulty is that most nations view mercury as a commodity, not as a toxic substance. For example, China is currently developing new mercury mines and some cultures use mercury in religious ceremonies. It is very important that the U.S. federal government view retirement of mercury as a part of the federal responsibility.

In terms of the global strategy, the group felt that it should be focused on reducing the demand for mercury, regulating the trade of mercury and stopping mercury mining (supply of mercury). ECOS should ask the federal government to put forth a position to the United Nations to deal with the mercury issue. This request will be included in the ECOS resolution to the President and Congress to take action to accomplish virtual elimination of mercury on an international scale.

Energy/Utility Boilers

The group agreed to postpone the discussion about how to deal with mercury emissions from utility boilers until after EPA comes out with its decision about whether it will regulate mercury emissions from power utilities. This issue will be an agenda item at the spring ECOS Air Committee meeting.

Two action items emerged from this discussion:
• A draft ECOS resolution to President and Congress will be developed to request that the federal government take action to establish a comprehensive national vision to virtually eliminate mercury at the national/international level. This resolution will also request that the United States seek United Nations action to support global research on mercury as a pollutant and commodity;
• ECOS will send a letter to Departments of Defense and Energy in order to start a dialogue about the appropriate short and long-term storage for mercury

II. State Fostered Discussions

Regional Collaboration

- *TMDL*s

  There was discussion about air-based mercury deposition affecting the development of TMDLs. States should support collaboration on how to do TMDLs based on air deposition of

mercury. It is first necessary to figure out what the logical "scale" of the TMDL is because air sources may not be confined within a state or even a country. There is also a need for additional resources to support monitoring efforts—there are many holes in the research because some states do not even monitor for mercury. It is important to do the air deposition TMDL analyses quickly because some states are under court orders to complete these types of TMDLs.

There is no clear mechanism to enforce TMDLs on air sources. EPA needs to provide guidance on this issue. States and EPA need to look at Maximum Achievable Control Technologies (MACT) standards and figure out if MACT reductions will result in depositions reductions. MACT may be inefficient because it will only help regulate boiler emissions; therefore States may need more than MACT to help enforce TMDLs. Currently, there are two pilot studies in Florida and Wisconsin on how to develop a TMDL based on mercury deposition. ECOS should work with EPA to learn from the pilot studies and to come forth with guidelines on how to enforce/implement TMDLs (for mercury and other pollutants) before launching many more mercury-based TMDL efforts.

Meeting attendees decided that a group from the ECOS Air and Water Committees should convene to examine air deposition and its impact on TMDLs and to gather information from states. Once the preliminary information has been gathered, this group will draft a letter to EPA asking for the establishment of a State-EPA workgroup to conduct further research on the issues surrounding air-based deposition on TMDLs, emphasizing the exigency of the issue due to court orders to develop these TMDLs.

- *Fish Advisories*
  Some meeting attendees proposed there be a common method for releasing fish advisories, while others felt it an impossible task. Some attendees felt that states should have flexibility to approach fish advisories their own way, but that it is also important that there is consistency among states in identifying and listing an impaired waterbody (due to fish advisories for mercury). EPA is coming out with methods on how to use fish tissue in water quality standards, which will inform the TMDL and water quality standards development processes.

  The group agreed to form an ad hoc group to discuss the issues surrounding fish advisories and to determine which questions or proposals to bring forward to ECOS and/or EPA.

Shared Learning

The group acknowledged a need for information exchange between states regarding regulatory issues, emerging technologies, mercury inventories, mercury reduction policy development, success stories, and new research. There was agreement on the need for a "mercury clearinghouse" to support information exchange as well as on the importance of having periodic meetings such as this one. Other information-sharing opportunities and suggestions for ECOS included: joining the national list serve maintained by NEWMOA, having all states participate in ECOS-sponsored topical workshops (via conference calls) with online presentations, and having all states participate in the development of a NEWMOA online database that catalogues activities pertaining to mercury. In addition, it was suggested that ECOS distribute to the states the model NEWMOA mercury legislation.

There was also discussion about possible collaboration on product bans. Some felt that it would be easier to put forth bans if the states collaborate. Others argued that bans are political non-starters and it would be a waste of time and energy to focus on them. It would be more

productive to work on air emissions issues, perhaps by starting with voluntary actions and covenants.

One person noted that it is important to keep in mind that the Department of Defense and the Department of Energy as well as other agencies are partners with the states—EPA is not the only partner. There were also suggestions pertaining to the next ECOS-sponsored mercury meetings. The group discussed the need for two types of meetings: one for commissioners and one for technical staff. The meeting for commissioners should occur approximately every two years and could focus either on persistent bio-accumulative toxic substances or multi-media approaches (that would include mercury and be focused on multi-pollutant policy strategies as well as the latest advances in mercury research). The technical staff meetings should also occur more often to discuss particular issues. The ECOS action item resulting from the discussion is to look for resources to host the two different types of meetings at the commissioner and technical levels in the next few years.

Multi-Pollutant Strategy

The group agreed that it is important to learn how to integrate control strategies and make it more cost effective to the regulated community as well as to the regulating agencies. An obstacle to integrating control strategies is section 112 of the Clean Air Act, which established the Maximum Achievable Control Technologies (MACT) program, because it is a single pollutant approach. Another difficulty is determining which pollutants are the proper ones to address in a multi-pollutant strategy. The group agreed that the time is right for commissioners to push this issue forward. Some agencies already have a multi-pollutant strategy, which should be encouraged and made more viable in a regulatory context. The ECOS Air Committee will be asked to pose the approach to a multi-pollutant strategy and present it to the ECOS for consideration at the spring meeting.

Five action items emerged from this discussion:
• ECOS Air and Water Committees will convene and examine the issue of air deposition and its impact on TMDLs. ECOS will then develop and send a letter to EPA asking for a State-EPA workgroup to work on air-based deposition on TMDLs
• an ad hoc group will look at water quality standards and fish advisories to determine whether a further discussion with EPA is necessary
• ECOS will encourage information sharing by joining the national list serve maintained by NEWMOA and participating in development of a NEWMOA online database
• ECOS will pursue ways to have both commissioner and technical staff level meetings
• the ECOS Air Committee will be asked to pose the approach to a multi-pollutant strategy and present it to the ECOS for consideration at the spring meeting.

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