

Pollution Prevention (P2) Grant:
NYSDEC - “Mercury-Free” Schools Program in New York State

The New York State Department of Environmental Conservation (DEC), in conjunction with staff from the Northeast Waste Management Official’s Association (NEWMOA) conducted five, half-day workshops in Syracuse, Rochester, Albany, New York City, and Long Island from the time period November, 2005 to February, 2006. The goal of these workshops was to promote the elimination of mercury in schools. This goal was achieved through our education outreach to school administrators, science teachers, health and safety coordinators, building and grounds personnel and school nurses on how to identify, inventory, collect and remove/recycle elemental mercury and mercury-containing items from their schools. The workshops also included discussion about the health hazards associated with mercury exposure, what to do in the event of a mercury spill, New York State mercury legislation and how to go about replacing their mercury-containing items with mercury-free alternatives. Informational handouts, brochures, a mercury inventory chart, and a poster called “*Mean, Mad, Mercury*” was produced and distributed at these workshops as a classroom aid to promote awareness of the hazards of mercury. The poster was also produced in Spanish, “*Mercurio, Loco, Loco*” for distribution. Copies of all of these are attached to the report.

NEWMOA was identified in the grant as our partner in conducting the workshops. A contract was developed and negotiated with NEWMOA to finalize this partnership with DEC. It was essential that we partner with NEWMOA, as their staff had already developed valuable experience on working with mercury removals from schools in Massachusetts. Over the past four years, NEWMOA has worked with 103 Massachusetts schools to remove over 850 pounds of mercury. Through these outreach efforts, NEWMOA has educated hundreds of teachers, school administrators, school nurses and students about the health and environmental hazards of mercury, and the importance of preventing future use of mercury in schools. NEWMOA’s expertise was called on to not just educate school personnel, but also to train DEC staff on the methods and pros and cons, that they have learned.

The following agenda was developed and implemented at all five workshops:

Mercury-Free Schools in New York State

Agenda

Introduction: Why focus on getting mercury out of schools?

- Numerous mercury spills at schools; clean-up expensive
- Mercury's health effects
- It's required by NYS law (i.e. Chapters 145, 676)
- Mercury elimination is a good progression to comprehensive chemical management

Background information on mercury

- Mercury's properties—why it is so useful
- Toxicity of mercury, neurological and developmental impacts
- Mercury cycle in the environment
- Sources of mercury
- Routes of exposure
- Fish advisories, FDA, NYDOH findings

Where is mercury found in schools

- Massachusetts experience
- Examples of mercury-containing items
- Where in schools mercury can be located
- Surprise locations

Getting a mercury clean-out program started

- Who to involve
- Coordinating a mercury team, elements for success
- Conducting the mercury inventory
- Collection materials needed
- Arranging the hazardous waste pick up

Current New York State Mercury Legislation

- Chapter 145
- Chapter 676

Mercury-Free Alternatives

- Examples and how they work
- Advantages/disadvantages
- Vendors

Recycling and Disposal

- Household Hazardous waste collections/ Clean Sweep/Private Recyclers
- NYS Hazardous Waste regs
- How to save on costs

Mercury Spills

- Spill clean up guidance
- Hands on exercise

Pitfalls to Avoid

- Lack of Coordination with Administration/Teachers
- Teachers/Nurses not wanting to give up their mercury-containing items
- Teachers too busy to attend meeting or inventory for mercury

Attendance was modest in the Syracuse, Rochester and Albany locations, but key players in the school administration were represented; each person disseminating the information they gained at these workshops to many school districts. New York City and Long Island had greater numbers in attendance, 26-42 people as compared to 7-15 in the Upstate locations.

The workshop's message, in all locations, had a greater impact than the attending numbers would indicate, spurring mercury inventories and clean outs at many school districts. In a large part, this was due to the efforts from the health & safety officers from the county Board of Cooperative Educational Services (BOCES) organizations.

BOCES is a public organization that was created by the New York State Legislature in 1948, to provide shared educational programs and services to school districts. BOCES helps school districts save money by providing opportunities to pool resources and share costs. Sharing is a very economical way for districts to provide programs and services that they might not be able to afford otherwise.

Although there were only five BOCES health and safety officers in attendance in Syracuse, they represented a total of 60 schools. In Rochester, the four BOCES health and safety officers present represented 120 schools. In Albany, the three BOCES health and safety officers represented 200 schools. In Long Island, the five BOCES health and safety officers that attended represented 435 schools. The gain to the number of schools that were the beneficiaries of the mercury information distributed from the workshop was much greater than the workshop attendee list would suggest.

The predominant audience for most of these workshops were buildings and grounds personnel. The exception to this was in New York City, where a significant proportion of the attendees were the "movers and shakers" from the New York City Department of Education.

Refer to Attachment A to review the attendee list from the aforementioned five workshops.

Outcomes from the Workshops:

Syracuse

As a direct result from attending the Syracuse workshop, the city of Syracuse's health and safety officer spearheaded a campaign to inventory, collect and remove mercury from 46 schools in the Syracuse city school district

The health and safety coordinator of the Onondaga/Cortland/Madison County BOCES affirmed that information and materials distributed at our Syracuse workshop was key to promoting awareness at schools in Onondaga County. Representatives from the Onondaga County BOCES will be collecting and removing mercury from 14 school districts (60 schools)

\$24,000 was awarded to the city of Syracuse and Onondaga county school districts as part of an environmental benefit project resulting from an consent order settlement with the DEC and Solvents and Petroleum Service, Inc. Attention generated from the DEC news release about Pollution Prevention's mercury outreach to schools resulted in this award.

Workshop Location	Schools/School Districts reached	Types/Pounds of Mercury Inventoried/ Removal Pending
<p>*Syracuse (Includes the City of Syracuse and Onondaga County School Districts)</p> <p>*City of Syracuse and Onondaga County Schools Districts were beneficiaries of \$24,000 monies awarded as an environmental benefit project resulting from a consent order between the DEC and Solvents and Petroleum Service, Inc.</p>	<p>106 Schools/ 15 School Districts</p>	<p>70 pounds of elemental mercury (this amount also includes mercury from mercury-containing devices such as lab and fever thermometers, and mercury switches)</p> <p>9 drums, approximately 5520 pounds of crushed fluorescent lamps</p> <p>10,353 fluorescent lamps (intact)</p> <p>222 Metal Halide lamps</p> <p>123 High Pressure Sodium lamps</p> <p>101 Mercury Vapor lamps</p> <p>159 Lab Thermometers</p> <p>6 Mercury switches</p> <p>2 Fever Thermometers</p>

Rochester

The city of Rochester school district (62 schools) affirmed that information and materials gathered at our Rochester workshop was beneficial in aiding the city school district's mercury clean out efforts. \$25,000 of EPA grant money, administered by the DEC, was designated to the city of Rochester's school district for mercury removal. Nine schools participated and 225 pounds of mercury were removed and recycled. The types of mercury removed included: elemental mercury, mercury-containing items such as lab thermometers, barometers, fever thermometers, hygrometers, spectral tubes, sling psychrometer and mercury gas law apparatus devices. Many of these devices were replaced with mercury-free alternatives, also funded by the aforementioned EPA grant.

The Monroe County BOCES used the information from our Rochester workshop to promote awareness at 13 school districts (120 schools). Because of the heightened awareness resulting from this information, more schools have been contacting the Monroe County BOCES to come and aid them in their removal of mercury. So far, five pounds of mercury has been removed, mostly containers of elemental mercury and thermometers.

Workshop Location	Schools/School Districts reached	Types/Pounds of Mercury Removed
<p>*Rochester (Includes Rochester City Schools and Monroe County School Districts)</p> <p>*Clean outs for Rochester City Schools funded by a \$25,000 grant from EPA</p>	<p>182 Schools/ 14 School Districts</p>	<p>225 pounds mercury (includes: elemental mercury, mercury-containing items such as lab thermometers, barometers, fever thermometers, hygrometers, spectral tubes, sling psychrometer and mercury gas law apparatus devices)</p>

Albany

Information from the Albany workshop was distributed to 200 schools (53 schools districts) by the Capital District BOCES. Albany City Schools and Albany County school districts were beneficiaries of a \$25,000 EPA grant to remove mercury from their schools. Inventories and informational materials developed and distributed at our workshops were used in their mercury clean out efforts.

376 pounds of mercury was removed from 39 schools (9 school districts). The types of mercury removed included: lab and clinical thermometers, blood pressure cuffs, elemental and mercury compounds, sling psychrometers, barometers, contaminated spill kits, food service - refrigerator thermometers, hydrometers, hygrometers and spectral tubes. Mercury-free alternatives were purchased with monies from the aforementioned grant.

Workshop Location	Schools/School Districts reached	Pounds of Mercury Removed
<p>*Albany (Includes Albany City Schools and Albany County School Districts)</p> <p>*Clean outs for Albany City and Albany County schools funded by a \$25,000 grant from EPA</p>	<p>9 schools participated in mercury clean outs</p> <p>200 schools/53 school districts were recipients of workshop information</p>	<p>376</p>

New York City

As a direct result of our workshop in New York City, the New York City Department of Education has committed to a mercury inventory, and ultimate clean out of mercury from its 1,500 schools, beginning in August of 2006.

Workshop Location	Schools/School Districts reached	Pounds of Mercury Removed
NYC	1,500 schools	Pending- (NYC Dept of Education has committed to inventory/remove mercury beginning August, 2006.)

Long Island

Information from our Long Island workshop was distributed to 85 school districts (435 schools) in Nassau and Suffolk counties. A post-workshop survey revealed that the workshop did raise awareness and spur mercury inventorying and clean outs at some Long Island schools. The Eastern Suffolk County BOCES, so far, has collected 31 floor-model blood pressure machines, 40 portable blood pressure machines, 19 wall-mounted blood pressure machines, 3 bottles of elemental mercury and 554 lab thermometers for disposal/recycling.

Workshop Location	Schools/School Districts reached	Pounds of Mercury Removed
Long Island (includes Suffolk and Nassau county schools)	435 schools/ 85 school districts	31 floor-model blood pressure machines 40 portable blood pressure machine 19 wall-mounted blood pressure machines 3 bottles of elemental mercury 554 lab thermometers

Conclusion:

In the nine months since these workshops were conducted, so much has been accomplished in the inventorying, collection, removal and recycling of mercury from these New York State schools, in spite of conflicting priorities and mandates (i.e. asbestos, lead, mold).

The materials developed for these workshops have been used to identify and inventory mercury-containing items at schools. The mercury posters, especially the spanish-language posters, have been very popular with the student population, a population implicated in causing many of the mercury spills at schools. Over 600 pounds of mercury has been removed so far from New York State schools (Rochester and Albany), with more mercury removals ongoing in Syracuse and Long Island schools. There is the promise of mercury removals coming from New York City schools. All this mercury elimination has resulted directly or has been strongly influenced by our outreach efforts at these five workshops. It is the elimination of mercury from these schools, that will protect the children, a sensitive population, from ill-health effects from a potential mercury spill at their schools.

The DEC PPU has also publicized our workshop efforts and outcomes with such venues as *The Conservationist* magazine (article forthcoming), a DEC press release (that resulted in the \$24,000 environmental project grant for Syracuse/Onondaga county schools), E-news (DEC in-house electronic publication), and the Spring 2006 Issue of Northeast Assistance and Pollution Prevention News.

Attachment A: Attendee List

Location of Workshops	Number of People	Types of People/Organizations Represented	Number of Schools/School Districts Represented
Syracuse	15	<p>Health & Safety Coordinators - Syracuse City SD - Onondaga/Cortland/Madison BOCES - Broome/Tioga BOCES</p> <p>Buildings & Grounds -Cortland City SD -North Syracuse SD -Hannibal CSD -Marcellus CSD -Onon CSD -Jamesville DeWitt SD</p> <p>Chemistry Teacher -Syracuse City, Corcoran HS</p> <p>NYSDEC - Region 7 -Solid & Hazardous Waste Engineer</p>	185 school districts
Rochester	13	<p>Science Teacher - Rochester School District</p> <p>Superintendent of Building & Grounds -Perry CSD -Fairport SD</p> <p>Monroe #1 BOCES -Health & Safety Officers</p> <p>Director of Operations - Sodus CSD</p> <p>Facilities Manager - Rochester School for the Deaf - Greece CSD</p> <p>NYS School Insurance Reciprocal</p> <p>NYSDEC- Region 8 -Regional Director</p>	240 school districts
Albany	7	<p>Superintendent of Building & Grounds -Berlin CSD -Brunswick CSD</p> <p>NYS Dept. of Health</p> <p>Capital District BOCES Health & Safety Coordinators</p> <p>NYSDEC- Region 4 Solid & Hazardous Waste - Environmental Engineer</p>	55 school districts

Location of Workshops	Number of People	Types of People/Organizations Represented	Number of Schools/School Districts Represented
New York City	26	<p>NYC Dept. of Education (NYCDOE) -Director of Environmental Health & Safety -Health Director - Region 3</p> <p>Superintendent of Maintenance -NYCDOE-DSF</p> <p>Maintenance Planner -NYCDOE-ROC2 -NYSDOE-DSF ROC3 -NYSDOE- DSF ROC4</p> <p>Science Teachers -NYCDOE - Dept of Science -NYC Museum School</p> <p>Assistant Principal -NYCDOE-Region 7</p> <p>Operations/Manifest/Compliance -Radiac Research Corp.</p> <p>Lab Specialist -Jacqueline Kennedy Onassis HS</p> <p>Environmental Consultant -NYC SCA</p> <p>Precision Environmental -Vice-President, Assistant VP of Operations</p> <p>United Federation of Teachers</p> <p>Research Scientist -DOE-OOSH</p> <p>Triumvirate Environmental -Vice President</p> <p>USEPA-Region 2 -Senior Policy Advisor</p> <p>NYSDEC - Region 2 -Citizen Participation</p>	1500 schools

Location of Workshops	Number of People	Types of People/Organizations Represented	Number of Schools/School Districts Represented
Long Island	42	<p>Buildings & Grounds Personnel</p> <ul style="list-style-type: none"> -Hampton Bays SD -Riverhead SD -Patchogue Medford SD -Oyster Bay SD -Wyandanch SD -Mineola UFSD -Southampton SD -Bayport Blue Point SD -Shoreham Wad River -Comsewogue SD -West Babylon SD -Connetquot SD -Northport/E. Northport -Mt. Sinai SD -Hauppauge SD -Manhasset SD -William Floyd SD -Garden City -Baldwin -Port Washington -Hewlett Woodmere <p>USEPA-Region 2</p> <p>District Consultant</p> <ul style="list-style-type: none"> -Great Neck <p>School Principal</p> <ul style="list-style-type: none"> - ESB-IAC <p>Health & Safety Coordinators</p> <ul style="list-style-type: none"> -Eastern Suffolk County BOCES -Nassau County BOCES -Bellmore-Merrick SD -Rocky Point SD -Sachem SD <p>School Nurse</p> <ul style="list-style-type: none"> -Rocky Point <p>Science Teachers</p> <ul style="list-style-type: none"> -Jericho SD -Baldwin SD -East Islip SD -Freeport SD <p>New York Schools Insurance Reciprocal</p> <p>Liberty Mutual</p>	85 school districts