



Building Successful Programs to Address Chemical Risks in Schools:

Summaries of State, Tribal, and Local School Chemical Cleanout Programs



Introduction

Potentially dangerous chemicals can be found in K-12 schools across the country. Every year, accidental spills of these chemicals endanger students and staff; result in lost school days; and cost millions of dollars to clean up. In many cases these spills are preventable. EPA and state agencies have found that a large majority of middle and high schools have outdated, unknown, improperly stored or unnecessary chemicals, potentially putting students and staff at risk. Due to the toxic nature of these chemicals, for some of these chemicals even one ounce can be extremely hazardous. Furthermore, students often have not developed the necessary skills to recognize the dangers these chemicals present when improperly managed. Therefore, proper chemical management is one of the most important issues that a school must address in order to create a safe learning environment for students and a healthy workplace for teachers and staff.

Chemical mismanagement in schools has been an important issue in many states, districts, and localities for some time. This document summarizes the experiences of several state, tribal, and local school chemical management programs across the country. The summaries highlight elements such as funding sources, partnerships, training, and responsible chemical management practices. In addition to the programs summarized in this document, there are links to states that have developed chemical management guidance or regulations.

Approaches to developing responsible chemical management programs must be flexible and allow for adding components in phases when resources and conditions are right for your school. While each school has its own set of unique circumstances, the need for responsible chemical management practices that ensure schools are safe from chemical risks is common among all. The experiences and practical knowledge summarized in this document will improve efforts to prevent chemical mismanagement in schools, and protect students, teachers, staff, and the environment.

EPA is building on the state, tribal, and local programs in the development of the Schools Chemical Cleanout Campaign (SC3), providing tools to SC3 partners designed to protect students from chemical exposures and improving chemical management in K-12 schools. Through the SC3, we hope to raise public awareness of chemical hazards and provide tools to prevent chemical exposures, remove unnecessary chemicals from schools and encourage responsible chemical management and safety practices. The most effective means of addressing each is through partnering with businesses and organizations in the local community. To support this campaign, SC3 partners have developed a variety of tools that encourage participation in cleanout efforts and provide guidance on developing successful chemical cleanout programs. Please visit the SC3 Web site at <http://www.epa.gov/sc3> for additional materials that will help in the development of a sustainable chemical management program.

The SC3 program addresses all potentially harmful chemicals found in schools, though additional programs by the EPA and others have specifically targeted mercury management in schools. While mercury is not the primary focus of the SC3 program, selected mercury management programs are included in the appendix to this document. For more information on State Mercury School Programs, please visit EPA's Mercury Web site:

<http://www.epa.gov/epaoswer/hazwaste/mercury/school.htm>

State, Tribal, Local Program Summaries at a Glance











The chart on the following pages illustrates SC3 program partners, funding sources, and components of the programs discussed in this document. If you are viewing this on the Web you can easily skip to a state's full program summary by clicking on the state's name. Some program summaries also contain additional Web links for more information.

Categories in the "program elements" area of the chart include:



- ❖ Regulations/Guidelines - state or local regulations or guidelines that are relevant to hazardous chemicals in schools.
- ❖ Chemical Inventory: - a program that has a specific chemical inventory component.
- ❖ Waste disposal – a program that includes chemical removal and disposal of unwanted, excess, dangerous, or inappropriate chemicals.
- ❖ Training – a program that includes a training component for relevant school staff on aspects of conducting a chemical inventory, cleanout, and responsible chemical management.
- ❖ Responsible Chemical Management – a program that includes development and implementation of practices to sustain long-term chemical management such as purchasing policies or chemical hygiene plans.
- ❖ Compliance/Technical Assistance a program that offers resources to schools to assist in implementation of program components during the life of the SC3 program and beyond.
- ❖ Additional Tools/Resources – a program that provides a variety of resources to assist with program implementation such as Web sites, templates, manuals, or experts to call for assistance.




The state, tribal, and local programs in this chart and the summaries contained in this document are listed alphabetically by state.



STATE, TRIBAL, AND LOCAL SC3 PROGRAMS AT A GLANCE

State	Partners							Funding Sources			Program Elements						
											Regulations/ Guidance	Chemical Inventory	Waste Disposal	Training	Responsible Chemical Management	Compliance/ Technical Assistance	Additional Tools/ Resources
Alabama		✓					✓	*				✓	✓	✓	✓		
Poarch Band of Creek Indians (AL)		✓				✓	✓						✓				
Arizona					✓							✓					
Onyx SEP (AZ)							SEP										
Arkansas	✓					✓		✓			✓						
California					✓	✓		*			✓		✓				✓
Colorado	✓										✓						
Estes Park High School		✓	✓			✓	✓					✓	✓	✓			
Indian Country (R8)				✓		✓	✓					✓	✓	✓	✓		✓
JC LEPC											✓		✓	✓			
Mesa County Valley					✓		✓	✓				✓	✓	✓	✓		
Sheridan School District					✓		✓	✓			✓	✓	✓	✓			
Western CO			✓	✓	✓	✓		✓						✓			✓
Connecticut				✓			✓	SEP				✓		✓			
Florida	✓	✓					✓	*				✓	✓		✓		
Idaho		✓				✓	✓	*				✓	✓	✓			
Illinois		✓	✓			✓	✓		✓		✓	✓	✓	✓	✓		✓
Indiana		✓		✓				✓	✓	✓	✓	✓					✓


Partners:

-  - State Education Agency
-  - Business/Industry


-  - State/Local Environmental Agency
-  - Local School District
-  - US EPA


-  - State/Local Public Health Agency
-  - Other Community Partnership

Funding:











 - Grant (EPA, SC3, other) *-SC3 Funded

SEP- Supplemental Environmental Project (please see page 7 for more information)



 - State Funds (tipping fees, trust funds, etc.)




 - School Resources (matching funds)



STATE, TRIBAL, AND LOCAL SC3 PROGRAMS AT A GLANCE

State	Partners							Funding Sources			Program Elements						
											Regulations/ Guidance	Chemical Inventory	Waste Disposal	Training	Responsible Chemical Management	Compliance/ Technical Assistance	Additional Tools/ Resources
Iowa		✓		✓			✓	*				✓	✓	✓	✓	✓	
Kansas		✓	✓						✓			✓	✓			✓	
Learjet, Inc.					✓		✓	SEP				✓	✓	✓			
Kentucky	✓		✓	✓		✓								✓			✓
Maine	✓	✓							✓	✓		✓	✓	✓			✓
Maryland	✓					✓		✓			✓						
Massachusetts	✓	✓					✓	✓	✓		✓	✓	✓	✓	✓		✓
Michigan		✓	✓	✓	✓	✓	✓		✓	✓		✓		✓			
Lansing Pilot				✓	✓		✓			✓		✓	✓	✓			✓
Dow Chemical		✓		✓	✓		✓	✓				✓	✓	✓			
Minnesota		✓					✓	✓				✓		✓	✓		✓
Missouri		✓				✓	✓	*				✓	✓	✓	✓		
MWSU SEP					✓	✓	✓	SEP				✓	✓	✓			
Montana		✓		✓				*	✓			✓	✓	✓			✓
Nebraska	✓	✓		✓			✓	*			✓	✓	✓		✓		
Clean Harbors SEP				✓	✓		✓	SEP				✓	✓	✓			
New Hampshire		✓							✓						✓		✓
Plymouth						✓	✓	SEP				✓	✓				
New Jersey				✓			✓	✓				✓	✓	✓			
New York					✓	✓	✓	*				✓	✓	✓			


Partners:

-  - State Education Agency
-  - Business/Industry


-  - State/Local Environmental Agency
-  - Local School District
-  - US EPA


-  - State/Local Public Health Agency
-  - Other Community Partnership

Funding:











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STATE, TRIBAL, AND LOCAL SC3 PROGRAMS AT A GLANCE

State	Partners							Funding Sources			Program Elements						
											Regulations/ Guidance	Chemical Inventory	Waste Disposal	Training	Responsible Chemical Management	Compliance/ Technical Assistance	Additional Tools/ Resources
North Carolina DENR		✓					✓	*					✓	✓	✓	✓	
NC Total Science Safety	✓			✓		✓			✓		✓						✓
North Dakota			✓				✓					✓					
Ohio	✓	✓							✓			✓	✓	✓			
Pennsylvania		✓		✓	✓	✓	✓	*				✓	✓				
Rhode Island	✓	✓	✓	✓		✓	✓	*	✓		✓		✓	✓			✓
Brown Univ					✓	✓	✓	SEP			✓	✓	✓	✓			
Tennessee	✓	✓		✓		✓	✓	*				✓			✓		
Texas					✓		✓	*			✓	✓		✓			
Utah	✓								✓				✓			✓	✓
Vermont	✓								✓		✓	✓		✓		✓	
Virginia					✓						✓	✓	✓	✓	✓	✓	✓
Washington		✓			✓				✓			✓	✓	✓	✓		✓
West Virginia				✓	✓		✓	SEP						✓			✓
Wisconsin	✓	✓					✓	*			✓	✓	✓	✓			
Green & Healthy	✓								✓					✓			✓
Wyoming	✓							*			✓	✓					


Partners:

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-  - Business/Industry


-  - State/Local Environmental Agency
-  - Local School District
-  - US EPA


-  - State/Local Public Health Agency
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Funding:

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-  - State Funds (tipping fees, trust funds, etc.)

-  - School Resources (matching funds)

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-ALABAMA-

The Alabama Department of Environmental Management

The Alabama Department of Environmental Management (ADEM), with assistance from EPA, started the *Schools Chemical Removal and Education* project in October 2006. ADEM is working with 36 high schools that serve environmental justice communities by helping them to inventory and properly dispose of inappropriate and unnecessary chemicals. School faculty and administrators will be trained in chemical management and will be provided with alternative practices that will reduce the presence of hazardous laboratory chemicals. Participating schools will be encouraged to modify their current science curriculum to incorporate micro-scale or small-scale chemistry. Small-scale chemistry is a cost-effective, pollution prevention program that reduces waste and eliminates the accrual of future wastes in participating schools. Features include lower lab costs, right-sized materials for experiments; and a reduced hazard of spills and glass breakage. Schools are also encouraged to participate in the Alabama Science in Motion (ASiM) program. ASiM is a network of traveling science vans that bring modern science laboratory equipment to high school classrooms across the state.

For more information on the Schools Chemical Removal and Education Project, contact Ron Shell of the Alabama Department of Environmental Management at (334) 271-7748 or rts@adem.state.al.us

The Poarch Band of Creek Indians

In October 2005, The Poarch Band of Creek Indians (Alabama), with assistance from a Tennessee Department of Environment and Conservation (TDEC) management team, EPA, Escambia County High School, and the Alabama Department of Agriculture and Industries, embarked on a school chemical cleanout effort affecting Poarch students in Escambia County, Alabama high schools. In addition to removing chemicals, science teachers and administrators were trained using Tennessee's Best Management Practices workshop curriculum. This curriculum teaches green laboratory practices, as well as the best ways to store and dispose of hazardous chemicals. Several measures of success were tracked, such as quantity, type, and toxicity class of chemicals removed, disposal cost, distance to disposal site, and other related economic factors. The effort focused on three schools chosen by the Poarch, directly benefiting 1,481 students, including 177 Native American students. The cleanout resulted in disposal of 445 pounds of hazardous lab chemicals, including five pounds of mercury. The disposal was coordinated with Alabama's Agricultural Pesticide Disposal program. TDEC continues to work with other schools in southern Alabama.

For more information on the Poarch Band's SC3 effort, please contact Troy Pierce at (251) 368-9136 x2683 or tpierce@poarchcreekindians-nsn.gov Information on the Poarch Band of Creek Indians partnership is also available on the EPA Web site, located at: http://yosemite.epa.gov/oarm/igms_egf.nsf/fca67ba1d90470b585256fb6006df291/871d3dd6d8a2e18525707c001ba674!OpenDocument

-ARIZONA-

Mesa Unified School District #4

The largest public school district in Arizona, Mesa Unified School District #4, has developed a comprehensive program to minimize the presence and use of hazardous chemicals in schools. The program has three primary components. The first component, Integrated Pest Management, is a system to prevent unacceptable levels of pest damage with the least possible hazard to people, property, and the environment. The second component is Custodial Chemical Standardization, which aims to clean out large stockpiles of accumulated custodial chemicals. The third component is the Chemical Inventory program, which is focused on secondary schools that have accumulated and improperly stored chemicals from the Science and Agriculture programs. The District has already begun to see results, which are detailed in the adjacent box.

SC3 Results: Highlights from Mesa Unified School District #4

- ❖ Reduced chemical usage in the schools by 15 percent and eliminated 14 chemical products.
- ❖ Eliminated the practice of accepting household chemicals by the schools.
- ❖ Cleared custodial closets of unauthorized chemicals.
- ❖ Raised awareness about preventing chemical hazards in science and agriculture programs.
- ❖ Aligned the curriculum with the necessary chemicals for classroom activities.
- ❖ Disposed all chemicals that were outdated, unnecessary, and incompatible.

For more information on this chemical management program, please contact Rick Michalek, Director of Operations, Mesa Public Schools on (480) 472-6000 or remichal@mpsaz.org

Onyx Special Services, Inc. Supplemental Environmental Project (SEP)

Onyx provides companies with hazardous waste recycling services for fluorescent lights and ballasts, lamps, transformers, batteries, mercury waste, and PCBs. To remedy federal and state hazardous waste violations, Onyx has agreed to a Supplemental Environmental Project (SEP). A SEP is an environmentally beneficial project that a regulation violator voluntarily agrees to perform as part of a settlement of an enforcement action. In return, EPA agrees to reduce the monetary penalty that would otherwise apply as a result of the violation. Onyx will spend \$125,000 to collect and dispose of unwanted hazardous chemicals from Phoenix school chemistry labs.

SC3 Program Design: Alternative Funding Sources

A Supplemental Environmental Project (SEP) is an environmentally beneficial project that a regulation violator voluntarily agrees to perform as part of a settlement of an enforcement action. SEPs may be used to assist with various SC3 program efforts depending on the stipulations of the settlement. SEPs are not a renewable source of funding or resources, but may be used to assist with aspects of SC3 implementation. SC3 program implementers may consider working with federal, state, or local partners to explore potential opportunities to leverage SEPs.

For more information on this SEP, please go to EPA Region 9's SEP Web site at:
<http://www.epa.gov/region09/enforcement/eoy03/2003seps.html>

-ARKANSAS-

The Arkansas Science Teachers Association and the Arkansas Department of Education developed the Laboratory Safety Guide for Arkansas K-12 Schools. The guide contains information for school facilities on Arkansas State Board of Education Guidelines, Federal Safety Rulings, and general safety precautions. Also, this document contains sample forms schools may find useful to ensure school science safety.

For more information on the Laboratory Safety Guide, please contact Penny Wilson of the Arkansas Department of Environmental Quality on (501) 682-0868 or at Wilson@adeq.state.ar.us

For a copy of the Laboratory Safety Guide, please visit the Arkansas Department of Education Web site, located at: http://arkedu.state.ar.us/curriculum/pdf/lab_safe2.pdf

-CALIFORNIA-

Los Angeles Unified School District's Pilot Program for Laboratory Chemicals

In compliance with California regulations, Los Angeles Unified School District (LAUSD) has developed a Chemical Hygiene and Safety Plan (CHSP). LAUSD used district and EPA SC3 funds to implement the CHSP. This effort is part of a larger program targeting school environmental issues.

The pilot program focused on disposing unused laboratory chemicals and ensuring stored chemicals are placed in proper containers. The Office of Environmental Health and Safety (OEHS) provided training and guidance for chemical safety coordinators, science teachers, and plant managers. Additionally, LAUSD used a tracking system to verify the amounts of chemicals in schools. LAUSD has reached 47 schools and removed 3,283 pounds of hazardous chemicals, positively affecting 116,802 students. Although the pilot program for laboratory chemicals ended in July 2005, OEHS will continue implementing prevention measures at all school sites.

For more information on the Pilot Program for Laboratory Chemicals, please contact Soe Aung, Environmental Compliance Manager, Los Angeles Unified School District at soe.aung@lausd.net Information about the Chemical Hygiene Plans and approved laboratory chemicals is available on the Office of Environmental Health and Safety Web site, located at: <http://www.lausd-oehs.org/chemical-hygiene.asp>

-COLORADO-

Department of Public Health

The Colorado Department of Public Health and Environment has issued a self-assessment document to assist schools in complying with chemical management and other rules and

regulations governing schools in the State of Colorado. The document presents a series of questions for schools to answer regarding lab, industrial, art, and vocational hazards.

For more information on the Colorado Department of Public Health and Environment self-assessment, please contact Lynette Myers, Administrator, Environmental Leadership Program on (303) 692-3477 or at lynette.myers@state.co.us You may also contact Therese Pilonetti-Hall on (303) 692-3642 or at therese.pilonetti@state.co.us

Information on the Colorado Department of Public Health and Environment self-assessment is located at:

[http://www.cdphe.state.co.us/cp/Institutions/schools/ChemsInSchools/SelfAssessment.PDF - search=%22colorado%20schools%20chemical%](http://www.cdphe.state.co.us/cp/Institutions/schools/ChemsInSchools/SelfAssessment.PDF?search=%22colorado%20schools%20chemical%)

Estes Park High School, Estes Park

With assistance from EPA Region 8, Estes Park High School plans to develop a Standard Operating Procedure for safe operation of school science experiments requiring chemicals. The school will also create partnerships with the Larimer County Department of Health and Environment and the University of Northern Colorado. Additionally, the school will train science, chemistry, technology, and art teachers in the safe use, storage, and disposal of chemicals. Unused, unsafe, outdated, and unnecessary chemicals will be collected and disposed of responsibly.

For more information on the Standard Operating Procedure, please contact Karen Glassman on (970) 586-2361 X3006 or at Karen.Glassman@psdr3.k12.co.us

Indian Country School Laboratory Hazard Consultation Program

The Indian Country School Laboratory Hazard Consultation Program is a cooperative effort involving Indian Country schools, EPA Region 8 program offices, and public and private sector

partners. This coalition is committed to creating a school laboratory environment in which chemicals are purchased wisely, stored safely, handled by trained personnel, used responsibly, and disposed responsibly.

The purpose of the Program is to develop, field test, and implement a Schools Chemical Cleanout Campaign that is specifically adapted to meet the unique needs and circumstances of schools in Indian Country.

These tools and resources were developed to assist teams of properly trained volunteers and professionals, who will visit schools

**SC3 Program Design:
Focus on Native American Populations**

EPA Region 8 is partnering with schools in Colorado's Indian Country to address responsible chemical management. The program is designed to meet the unique needs of schools in Indian Country.

This SC3 program developed informational materials that will help sustain long-term responsible chemical management. These include:

- ❖ Preventive measures for school laboratories;
- ❖ Hazardous waste management for school laboratories; and
- ❖ Resources for identifying and correcting environmental hazards in tribal schools.

in Indian Country to review the conditions in school laboratories and report their findings to school authorities. In addition to reporting findings, the teams will provide information and assistance on ways the school can responsibly dispose unwanted materials, address problem chemicals and equipment deficiencies, and lower the risks of future problems or liabilities through responsible chemical management.

For further information on The Indian Country School Laboratory Hazard Consultation Program, please contact Matt Langenfeld, EPA Region 8, on (303) 312-6284 or at langenfeld.matthew@epa.gov

Jefferson County Local Emergency Planning Committee

The Jefferson County Local Emergency Planning Committee (JCLEPC) provided assistance to Colorado public schools by developing policy guidelines for procuring environmentally preferable chemicals to help curb the use of toxic chemicals in chemistry lab exercises. JCLEPC will develop training and policy guidelines that can be adopted statewide. The program is aimed at a rural community and has a solid commitment from various stakeholders (i.e., the applicant has established a good working relationship with their Local Environmental Planning Commission members).

For more information on the Jefferson county Local Emergency Planning Committee, please contact Christina Aquilera, Jeffco Public Schools, on (303) 982-2350 or at caquilvera@jeffco.k12.co.us

Mesa County Valley School District #51, Grand Junction

With assistance from EPA Region 8, Mesa County Valley School District #51 is removing all chemicals prohibited by the State of Colorado from schools and reducing restricted chemicals by 30 percent. The program will identify and responsibly dispose excess and unwanted chemicals and, to reduce future accumulations of chemicals, the program will encourage the use of micro-scale laboratories and inventory sharing to reduce accumulations of chemicals. Chemical safety training will be provided to all teachers and administrators, and personnel will be available to provide assistance and consultation to other districts.

For more information on Mesa County Valley School District #51's chemical management program, please contact Charles Pope of Mesa County Public Schools on (970) 254-7525 or at cpope@mesa.k12.co.us

Sheridan School District #2, Arapahoe County

Sheridan School District #2, with assistance from EPA Region 8, will conduct an inventory of chemicals at the middle and high school. Higher risk chemicals such as mercury, cyanide, arsenic, and acidic anhydride will be prioritized for early removal and proper disposal. New policies will be adopted for the purchase, storage, and handling of laboratory chemicals. The District will provide training and education of schoolteachers. Chemicals will be inventoried and tracked to eliminate accumulation and minimize hazards to school students.

For more information on Sheridan School District #2's chemical management program, please contact Jim Abrahamsen of Sheridan County Public Schools, on (720)-833-6907 or at abrahamsen@sheridan.k12.co.us

Western Colorado Regional Resource Teams for School Chemical Safety

The Mesa County, Colorado Health Department purchased software from the Journal of Chemical Education (JCE) to assist with chemical management and prevention. The software purchase was made possible through a grant from the Colorado Department of Public Health and Environment with funds available from the U.S. Preventative Health and Health Services. The software purchased includes *ChemPages Laboratory*, *General Chemistry Multimedia Problems*, and *Periodic Table Live!*, which are a part of JCE's General Chemistry Collection. In an effort to reduce and prevent the risk of hazardous chemicals to students and staff in middle and high schools, the County also created School Chemical Safety Web pages to assist in the management of school laboratory chemicals. The Web site provides a link to School Chemical Safety Education Online, a site that gives teachers the ability to show students dynamic experiments without the risk and cost associated with purchasing, storing and disposing of hazardous chemicals.

For more information on the Western Colorado Regional Resource Teams for School Chemical Safety, please contact Monique Mull of Mesa County Public Schools at (970) 248-6962 or Monique.Mull@mesacounty.us. Information is also available on the Mesa County Health Department Web site, located at: <http://health.mesacounty.us/environment/schoolchemicals.cfm>

-CONNECTICUT-

United Oil Recovery of Connecticut SEP

United Oil Recovery of Connecticut – a waste treatment and storage facility – entered into a consent agreement with EPA, which included a Supplemental Environmental Project through which over 100 Connecticut K-12 schools received assistance with their chemical management. The company funded the purchase of chemical storage cabinets for schools, and also offset disposal costs.

For more information on this Supplemental Environmental Project, please contact Amelia Katzen of EPA Region I at (617) 918-1869 or Katzen.Amelia@epa.gov

-FLORIDA-

The Florida Department of Environmental Protection, in partnership with the Florida Department of Education, is coordinating a school science laboratory cleanout endeavor as part of the Environmental Protection Agency's SC3 Program. The SC3 partnership is designed to assist school districts in compliance assistance, safety training, and waste disposal. The program includes hazardous waste compliance assistance inspections at public schools throughout the state. The program also includes follow-up inspections within months of the initial inspections to determine if violations and unsafe practices have been corrected. An additional four counties have been selected for an SC3 pilot project.

For more information on the school science laboratory cleanout, please contact Ms. Kathy Gaynor, Environmental Engineer, Hazardous Waste Regulation Section, Florida Department of Environmental Protection, on (850) 245-8782 or at: kathy.gaynor@dep.state.fl.us

More information on the Florida Schools Chemical Cleanout Campaign is available on the Florida Department of Environmental Protection's Web site, located at:

<http://www.dep.state.fl.us/waste/categories/hazardous/pages/schoolchemicals.htm>

-IDAHO-

SEP Conducted by University of Idaho

A 2003-2004 Supplemental Environmental Project, conducted by the University of Idaho with assistance from the Idaho Department of Environmental Quality (DEQ), revealed that schools in Idaho have accumulated a significant amount of hazardous chemicals. Many Idaho schools also lack knowledge of proper disposal procedures. As a result, DEQ partnered with local waste handlers, universities, community leaders, and school officials to develop strategies for removing chemicals from schools. EPA provided funding for the initial effort focused on schools in the Boise area, and the program was eventually expanded statewide. The success of this effort prompted DEQ to provide additional funding to support the effort. The combined EPA and DEQ funds provided 22 schools with assistance in identifying, categorizing, and disposing chemicals. DEQ used a "mini-grant" approach that offered schools \$1,000 toward chemical removal. The schools were required to provide the remaining funds to cover the cost of chemical management activities. DEQ also leveraged a college-level intern to assist in developing educational materials and provide technical assistance to support the program. The program resulted in the removal of 1,411 pounds of hazardous chemicals. Two school personnel training sessions focused on preventing future chemical management problems took place in the autumn of 2006. DEQ is looking into ways to fund additional cleanouts.

SC3 Program Design: Mini-Grant Approach

Idaho DEQ used a mini-grant approach that offered \$1000 to schools to jump-start their chemical management activities. These grants:

- ❖ Provided an incentive to schools to cover the cost of performing the remaining chemical management activities.
- ❖ Maximized a limited amount of funding to benefit more schools.

For more information on the SEP, please contact Patti Best of the Idaho Department of Environmental Quality at (208) 373-0146 or Patti.Best@deq.idaho.gov Information about the SEP is also available on the Idaho Department of Environmental Quality's Web site, located at:

http://www.deq.idaho.gov/waste/educ_tools/chemical_roundup.cfm

-ILLINOIS-

As part of the Illinois Sustainable Schools Project, the Illinois Waste Management and Research Center and Illinois Environmental Protection Agency (IEPA) provide free facility chemical management assessments (FCMA) to Illinois schools. FCMA's consist of a review of chemical inventories as well as storage, management, and disposal practices for both laboratory and facility chemical use. These assessments assist in the implementation of an inventory system to track purchase, quantity, and disposal of chemicals used for facility maintenance and curricula at participating schools. These assessments also assist with the segregation, inventory, and packaging of chemicals identified for disposal. Under state law, IEPA is required to collect chemicals from schools once every three years. IEPA provides the means to properly dispose of

the chemicals on a priority basis, as determined by IEPA. As of May 2006, IEPA has assisted 394 school cleanouts resulting in more than 1,009 fifty-five gallon drums of hazardous waste collected and properly disposed.

IEPA has several programs that are designed to improve the ability of schools to provide a safe and healthy environment for all those who use their facilities. The IEPA's Office of Pollution Prevention delivers a workshop to teachers, which provides information on several issues, including:

- Safer alternatives to hazardous chemicals used in science classes;
- Procedures for safely using and storing hazardous educational materials;
- Location of educational materials on hazards in science rooms; and
- How to safely dispose of mercury.

Attendance at the workshop is mandatory for the teachers. As of May 2006, the program has conducted a total of 28 Safe Chemicals in Education Workshops, with over 388 teachers having attended. The program has also sponsored six workshops on green building supplies for school custodial staff.

For more information on the Illinois Sustainable Schools Project, please contact Becky Lockart of the Illinois Environmental Protection Agency at (217) 524-9642 or becky.lockart@epa.state.il.us. Information is also available on IEPA's Green School Program Web site, located at: <http://www.epa.state.il.us/p2/green-schools/index.html>

-INDIANA-

The Indiana Clean Sweeps Program focuses on removing unlabelled, unknown, expired, and unnecessary chemicals from chemical storage closets and classrooms, and training school staff on proper chemical management. According to the 2005 *Indiana Pollution Prevention Annual Report*, the Clean Sweeps Program, made possible by Indiana Department of Environmental Management (IDEM) and EPA, assisted schools with the removal of unwanted, unstable, and unused chemicals from their science laboratories. Hundreds of bottles of chemicals were removed from schools as a result of this Program. In 2002 and 2003, a total of 21 schools received the free inventory services and had chemicals packed, transported, and recycled or disposed of free of charge.

IDEM started Round 3 of the Clean Sweeps program in August 2005, resulting in cleaned out labs in 20 schools, with 12 additional schools scheduled for cleanout in 2006. IDEM is currently exploring funding options to assist these 12 schools. Chemicals not targeted for removal are reorganized to help teachers establish a more efficient storage system. Teachers are also given information on how to conduct some common experiments with less hazardous materials and smaller quantities of chemicals, while achieving the same desired results.

Participating schools are also given other logistical- and maintenance-oriented suggestions to improve the operational efficiency of their labs. Suggestions include: purchasing a steel cabinet for storage of flammables; installing smoke detectors and fire extinguishers; putting chemicals in a single storage location; having Material Safety Data Sheets and chemical inventories readily

available; installing lips on shelves and obtaining doors with locking mechanisms to prevent accidental spills; and ensuring the chemical storage room has its own ventilation system.

For more information on the Indiana Clean Sweeps Program, please contact Kendall Martin of the Idaho Department of Environmental Management on (317) 234-4048 or at krmartin@idem.in.gov. Information on the Clean Sweeps Program is also available on the IDEM Web site, located at: http://www.in.gov/idem/your_environment/education/schoolnews/cleansweep.html

-IOWA-

EPA Region 7 currently facilitates the Iowa school cleanout effort through on-site compliance assistance visits and a partnership with Des Moines Metro Waste Authority (MWA). As of December 2006, 200 schools of 366 have been assessed, and 222,446 pounds of hazardous chemicals were removed. Of the 200 schools assessed, high-hazard (time-sensitive) materials were removed from 97 schools. The Iowa program not only focuses on the removal of excess laboratory chemicals, but also waste storage practices; responsible chemical management; and, education of teachers, administrators, and facilities personnel. The MWA has been supporting SC3 efforts in Iowa since approximately 2000. EPA funding has allowed MWA to reach out to more schools and develop a series of training sessions to complement the efforts, and well over 50 training sessions have been conducted. MWA has been successful in partnering with EMC Insurance Companies (EMC) to expand the program throughout the state and ensure chemical management efforts are in place for years to come. EMC works with insured schools to implement responsible chemical management activities. This ensures that schools are adequately trained in chemical management practices. The school staff completes extensive training that focuses on environmental compliance awareness, waste stream identification, alternatives, and a review process for the on site assessment.

For more information on the Iowa school cleanout and compliance assistance effort, please contact Ed Buckner of EPA Region 7 at (913) 551-7621 or buckner.edwin@epa.gov. Contact Judi Mendenhall or Becky Wehrman of the Des Moines Metro Waste Authority on (515) 967-5512 to learn more about their training sessions. For more information on EMC Insurance Companies' efforts to address chemical management in Iowa schools, please contact Kent A. Candee at (515) 345-2728 or Kent.A.Candee@emcins.com

-KANSAS-

Kansas Lab Chemical Sweep

In April 2002, the Kansas Department of Health and Environment (KDHE) launched a statewide Lab Sweep Program aimed at removing obsolete or unwanted potentially hazardous chemicals from secondary school laboratories. The one-time collection program was offered to all public and private secondary schools free of charge. Funding for the program originated from the \$1.00 per ton solid waste tipping fee paid to the state for all waste disposed at landfills. The program served secondary schools in 91 of the 105 counties in Kansas. Additionally, KDHE provided chemical assessment and disposal services to any school willing to sign an agreement affirming that they are making a good faith effort to manage, store, and label chemicals properly and make wise purchasing decisions. As of January 2005, KDHE reported that 194 schools have participated and

nearly 12,000 containers of hazardous waste have been removed. KDHE is currently evaluating whether to extend the program to junior college laboratories.

For more information on the Kansas Lab Chemical Sweep program, please contact Maria Morey of the Kansas Department of Health and Environment at (785) 296-1611 or mmorey@kdhe.state.ks.us

Learjet, Inc. SEP

In a November 2006 settlement with EPA, Learjet, Inc. agreed to initiate a Supplemental Environmental Project (SEP) to benefit Kansas school districts near Wichita. The purpose of the SEP is to identify a school needing assistance with management of hazardous wastes in chemistry laboratories, art departments, photography departments, shop departments and facilities. Learjet will provide assistance in collecting, labeling, packaging, transporting, treatment, and/or disposal of hazardous materials and training of school personnel at no cost to the school.

For more information on the Learjet, Inc. SEP, please contact Ed Buckner of EPA Region 7 at (913) 551-7621 or buckner.edwin@epa.gov

-KENTUCKY-

The Kentucky Department of Education, in cooperation with the Center for School Safety, the State Fire Marshall, the Department of Health, Kentucky Occupational Safety and Health Program, the Kentucky Science Teachers Association, and a private laboratory safety consultant, created a CD-ROM-based tool. The CD promotes and ensures best practices, current information, and readily accessible resources and recommendations related to safety issues in the science classroom and laboratory. The CD also includes both professional and regulatory standards specifically for Kentucky teachers and students and provides practical resources for creating and maintaining a science safety plan, including a chemical management component.

For more information on the CD-ROM tool, please contact Karen Kidwell of the Kentucky Department of Education at (502) 564-2106 or at karen.kidwell@education.ky.gov

-MAINE-

In 2003 and 2004, the Maine Department of Environmental Protection (DEP) conducted a mercury and chemical cleanout program for schools. Through the program, 6,500 pounds of chemicals and over 1,000 gallons of hazardous wastes and 800 pounds of mercury were removed from science labs, maintenance departments, art classrooms, vocational classrooms, and nurses' stations in 80 schools. Radioactive materials were also discovered in nearly a dozen schools, and were subsequently removed. As part of the program, DEP, in partnership with the Department of Labor, also held chemical management workshops for school faculty.

In 2005, as a result of the growing concern over hazardous chemicals in public schools, the Maine legislature directed the Departments of Education and Environmental Protection to develop recommendations for assisting school districts. The resulting stakeholder group recommended hiring a statewide chemical coordinator as well as local and regional coordinators to ensure sound

chemical management programs in schools. Legislation will likely occur in 2007 with respect to the recommendations of the stakeholders group.

In 2006, the Department of Education coordinated a cleanout effort for nearly 75 schools. Chemicals were cleaned out of schools at each school's own expense, but at a pre-negotiated reduced rate available through a particular vendor.

For more information on chemicals in Maine schools, please contact Ed Antz, Education Specialist, Maine Department of Education on (207) 624-6886 or at Ed.Antz@maine.gov Information is also available on the Maine Department of Education Web site, located at: <http://www.maine.gov/education/const/fmt.htm> - Chemicals

-MARYLAND-

The Science Safety Project Committee of the Maryland Science Supervisors Association has developed a Science Safety Manual. The committee produced a manual that guides schools in making instructional decisions that would support improved performance for all students. The Manual communicates clearly the best safety practices in the science classroom and laboratory and provides guidelines for School Science safety, including guidelines for managing, handling, and disposing of hazardous chemicals.

For more information on the Science Safety Manual, please visit: <http://www.mdk12.org/instruction/curriculum/science/safety/>

-MASSACHUSETTS-

The Massachusetts Department of Environmental Protection (MassDEP) has developed a program to help school administrators address hazardous chemicals in their schools. Since 2002, School Chemical Management Grants are available through MassDEP's Municipal Waste Reduction Grant Program. As of early 2007, 32 grants have been awarded. Each participating school is required to form an environmental health and safety team comprised of administrators, science and art teachers, facilities managers, and a local public safety officer.

MassDEP seeks to prevent future hazardous chemical problems by offering technical assistance and a one-day training session, which is required for at least three members of the school's Environmental, Health, and Safety team. Participants also receive copies of the Massachusetts School Chemical Management Program Manual. MassDEP reimburses participating schools up to \$5,000 for clean-out services provided by hazardous waste contractors. The one-day training sessions are also open to communities that did not receive a grant so that the information about responsible chemical management reaches a broader audience.

For more information on the MassDEP program, please contact Tina Klein at (617) 292-5704 or tina.klein@state.ma.us Information about the program is also available on the MassDEP Web site, located at: <http://www.mass.gov/dep/service/compliance/schlchem.htm>

-MICHIGAN-

Michigan DEQ Community Pollution Prevention (P2) Grant Program

The Michigan Department of Environmental Quality (MDEQ) Community Pollution Prevention (P2) Grant Program seeks to address school chemical waste reduction of by cleaning out excess, legacy, unused, and improperly stored chemicals and requiring the implementation of toxic chemical waste minimization procedures in schools. The Community P2 Grant Program receives funding through the Cleanup and Redevelopment Trust Fund with interest earned on unclaimed beverage container deposits. MDEQ awarded \$211,120 to 11 communities in 2005. A total of \$250,000 in funding through the Community P2 Grant Program was available to address waste reduction of school chemicals in 2006. Organizations receiving grant funds are required by law to match at least 25 percent of those funds. The goal of the Community P2 Grant Program is to promote innovative local P2 initiatives that could act as models of sustainability to be shared by other communities across the state. EPA has also partnered with MDEQ to carry out school chemical cleanouts, including on-site non-regulatory audits, training, technical assistance and disposals in three Michigan communities 2004 through 2006.

Information on the Michigan DEQ Community Prevention (P2) Grant Program is available by contacting Robert McCann of the Community Pollution Prevention Grant Program on (517) 241-7397. Additional information on the grant entitled *Pollution Prevention Grants Keep Schools Safe* is found on the Michigan Department of Environmental Quality's Web site, located at: http://www.michigan.gov/deq/0,1607,7-135-3308_3323-120449--,00.html

Lansing, Michigan Pilot

In February 2005, U.S.EPA, Michigan Department of Environmental Quality, General Motors, Chemical Strategies Partnership, and the Lansing Public School District partnered to demonstrate that all organizations in a school district's supply chain can work together to improve chemical and waste management. This transformation is achieved through a business approach known as "servicing." Servicing approaches to chemical and waste management have proven to be long-term, least-cost, and flexible in resolving private sector chemical and waste issues. Under this approach, the relationship between customer and supplier changes from selling products to receiving product services. The supplier (or service provider) covers the entire lifecycle: Procurement, inventory management, storage, application/use, internal distribution, collection, treatment, disposal, training, information technology, monitoring, and reporting. Benefits for the customers include cost-savings, reduced chemical use (through improved procurement practices, better information, and better overall management), reduced waste generation, enhanced recycling, and improved overall compliance. Lansing selected a single service provider to provide a Chemical and Resource Management Services (CRMS) program for all the school district facilities. The service provider provides all chemicals, as well as chemical and resource management services, for less cost than Lansing historically spent on chemicals and waste disposal alone.

For more information on the Lansing Pilot Project, please contact Priscilla Halloran of EPA at (703) 308-8802 or halloran.priscilla@epa.gov Information on chemical management services can also be found on EPA's Web site, located at: <http://www.epa.gov/epaoswer/hazwaste/minimize/cms.htm>

Dow Chemical Company Partnership

From the spring through fall of 2006, EPA, Michigan DEQ, and The Dow Chemical Company partnered to create a four-phase pilot program to foster safer practices in school laboratories in Saginaw County schools. The four phases are:

- Teacher lab training;
- School audits;
- School chemical collection; and
- Final training designed for administrators with follow up with teachers.

SC3 Program Design: Industry Partnerships

EPA, Michigan DEQ, and The Dow Chemical Company partnered to create a four-phase pilot program to foster safer practices in school laboratories in Saginaw County schools.

- ❖ Uses the specialized expertise and resources of each partner that is most relevant to each phase of the program.
- ❖ Results in creating defined partner roles that help to ensure participation.

Each member of the partnership contributed funding or expertise to the various phases of the pilot program. In total, 34 schools participated in the Chemical Collection Program (CCP). On collection day, school representatives transported chemicals to a drive-through maintenance building where a waste management company sorted and packaged them for disposal. The CCP resulted in the collection/disposal of approximately 3,600 pounds of various chemicals. On-site audits were conducted at 32 schools. The audits, which lasted about one hour, consisted of an audit team inspecting chemical storage areas, speaking with teachers, and asking and answering questions about chemical management. Each school received a completed audit checklist so that they could follow-up on any items of concern.

For more information on the DOW Chemical Company Partnership, please contact Janet Haff of EPA Region 5 at (312) 353-7923 or haff.janet@epa.gov

-MINNESOTA-

The Minnesota Healthy Schools program is an interagency, collaborative program that works to help schools resolve a variety of issues, such as health, performance, and sustainable responsible chemical management. The program, initiated through a grant from EPA, offers technical assistance, online resources, and demonstration projects. Three Minnesota schools are part of the pilot to test ways to make their schools healthier and more chemically sustainable. The progress of the pilots can be tracked on the Healthy Schools Web site referenced below. A component of the program focuses on removing unsafe chemicals from laboratories and establishing better management to prevent future problems due to hazardous chemicals.

For more information on the Minnesota Healthy Schools program, please contact Linda Countryman at (651) 215-0269. Information is also available on the Minnesota Healthy Schools program Web site, located at <http://www.healthyschools.state.mn.us/>

-MISSOURI-

Meramec Regional Planning Commission (MRPC)

In September 2006, the Meramec Regional Planning Commission (MRPC), a voluntary council of local governments, was awarded a grant from EPA to pilot a school laboratory cleanout and responsible chemical management program in a seven-county region of Missouri. MRPC, in partnership with the Ozark Rivers Solid Waste Management District, is working with five schools to inventory and responsibly dispose of chemicals. Additionally, school staff responsible for laboratory chemicals will be trained in proper storage, inventory, handling, use, and disposal procedures. MRPC intends to help participating schools improve their methods of procuring chemicals and find safer alternatives. If this pilot project proves to be successful, MRPC plans to work with the Ozark Rivers Solid Waste Management District to establish a continuing program in South Central Missouri.

For more information on the Meramec Regional Planning Commission's chemical management program, please contact Tamara Snodgrass, Manager of Environmental Programs of the Meramec Regional Planning Commission at tsnodgrass@meramecregion.org

Missouri Western State University SEP

In a November 2006 settlement with EPA, Missouri Western State University (MWSU) agreed to initiate a Supplemental Environmental Project (SEP) to benefit the St. Joseph, MO, school district. The purpose of the SEP is to identify a school needing assistance with management of hazardous wastes in chemistry laboratories, art departments, photography departments, shop departments, and other facilities. MWSU will provide assistance in collecting, labeling, packaging, transporting, treatment, and/or disposal of hazardous materials at no cost to the schools.

For more information on the Missouri Western State University SEP, please contact Ed Buckner of EPA Region 7 at (913) 551-7621 or buckner.edwin@epa.gov

-MONTANA-

In August 2004, Montana Department of Environmental Quality (MDEQ) surveyed 408 middle and high schools statewide to collect information on the types of chemicals present in school science labs. Over 38 percent of the schools responded, reporting a total of 570 different chemicals. As of June 2006, a total of seven schools and approximately 3,000 pounds of hazardous chemicals have been removed and responsibly disposed. Cleanouts are planned for an additional three schools, including two in Indian Country.



Chemical mismanagement in a Montana school.
Photo courtesy of MDEQ.

MDEQ also organized a series of one-day training courses on school lab chemical safety and management during the last two weeks of September 2005. The workshops, which were

conducted by Safety and Science Education Consultants, Inc., were held in nine communities. One hundred and fourteen teachers, administrators, and school custodians completed the workshops, representing schools from 43 communities. The Business and Community Assistance Program of MDEQ has received grant funding that will be used to assist schools in the proper removal and disposal of unwanted chemicals. MDEQ has also received funding from EPA to expand the Laboratory Cleanout Program and the funds are to be dedicated to removing chemicals from more schools in Montana.

For more information about Montana Department of Environmental Quality's efforts, please contact Bob Reinke on (406) 444-435 or breinke@mt.gov or Bonnie Rouse on (406) 841-5251 or Brouse@mt.gov MDEQ has a comprehensive Web site that provides chemical management resources on lab safety, conducting a chemical inventory, chemical purchasing, and other topics: <http://www.mdeqschoollabs.com/index.asp>

-NEBRASKA-

Nebraska Department of Environmental Quality (DEQ)

In 2003, the Nebraska Department of Environmental Quality (DEQ) issued guidance documents on managing and disposing school chemicals. These documents contain guidelines for the disposal of hazardous chemicals and provide helpful hints to avoid the need for disposal in the future. The Keep Nebraska Beautiful Materials Exchange Program has been identified as a useful resource, as school districts may be able to provide excess, usable chemicals to another school district in need and also attempt to pool disposal efforts among several schools or school districts to help reduce disposal costs. The Nebraska Materials Exchange Program has encouraged businesses and schools across the state to review disposal costs and examine the management of waste products since its inception in 1994.

For a copy of the Nebraska Department of Environmental Quality's *Environmental Guidance Document on School Chemicals and Disposal* is available on the NDEQ Web site at <http://www.deq.state.ne.us/Publications.nsf/0/d9583aaae76ad49c8625690b007378a3?OpenDocument>

For more information on the Materials Exchange Program, please visit the Keep Nebraska Beautiful Web Page, located at: <http://www.knb.org/exchange.html>

Clean Harbors Environmental Services, Inc. SEP

In a February 2004 settlement with EPA, Clean Harbors Environmental Services, Inc. (CHESI) agreed to initiate a Supplemental Environmental Project (SEP) to benefit Nebraska school districts. The SEP identifies schools needing assistance with the management of hazardous wastes in chemistry laboratories, art departments, photography departments, shop departments and facilities. CHESI will provide assistance in collecting, labeling, packaging, transporting, treatment and/or disposal of hazardous materials at no cost to the schools.

For more information on the Clean Harbors Environmental Services, Inc. SEP, please contact Ed Buckner of EPA Region 7 at (913) 551-7621 or buckner.edwin@epa.gov

-NEW HAMPSHIRE-

New Hampshire Pollution Prevention Program

The New Hampshire Pollution Prevention Program (NHPPP) is helping schools address their hazardous materials management responsibilities through outreach, site visits, and assistance with school chemical cleanouts. NHPPP staff provides free on-site assistance in schools, focusing on the science, art, industrial arts, technology education, and custodial departments. NHPPP assists schools by performing on site assessments to identify potential hazards associated with school chemicals and products. NHPP also provides guidance on compliance with environmental regulations and information on the proper disposal options for unwanted chemicals and products.

For more information about the New Hampshire Pollution Prevention Program, please contact Sara Johnson, Pollution Prevention Program Manager, New Hampshire Department of Environmental Services, on (603) 271-6460 or at sjohnson@des.state.nh.us Information about the program is also available on the New Hampshire Pollution Prevention in Schools Project Web page, located at: <http://www.des.state.nh.us/nhppp/schools/>

Plymouth State University SEP

In November 2005, EPA entered into a consent agreement with Plymouth State University of Plymouth, New Hampshire. This settlement includes payment of a \$25,993 penalty, as well as entering into an Supplemental Environmental Project (SEP) with a value of \$74,000, which entails providing comprehensive hazardous material/waste management training to New Hampshire secondary schools, and providing services for up to 20 schools to safely dispose of unusable and/or dangerous chemicals.

For more information on the Plymouth State University SEP, please contact Sara Johnson, Pollution Prevention Program Manager, New Hampshire Department of Environmental Services on (603) 271-6460 or at sjohnson@des.state.nh.us

-NEW JERSEY-

Bergen County Utilities Authority

The Bergen County Utilities Authority (BCUA) received funding from EPA to implement the School Science Lab Chemicals and Mercury Removal Mini-Grant Program. BCUA plans to cleanout hazardous waste in the 80 school districts in its area. The BCUA is the lead agency that brings the hazardous waste vendor and the schools together. The BCUA has entered into an agreement with a hazardous waste collection vendor, which will provide schools in eleven participating school districts with the following services on-site: Identification, sorting, handling, packaging, transportation and disposal of potentially hazardous chemicals. As of September 2006, four schools have been cleaned out.

For more information about the School Science Lab Chemicals and Mercury Removal Mini-Grant Program, please contact Linda Longo, EPA Region 2 on (212) 637-3565 or longo.Linda@epa.gov

-NEW YORK-

In the last few years, the Rochester City School District (RCSD) has instituted a number of practices to improve the management and proper disposal of hazardous materials. The current effort targets four program areas:

- Hazard communication and safe chemical storage training for science teachers;
- Disposal of excess chemicals identified by teachers;
- Improving lab procedures to reduce amounts of chemicals ordered; and
- Restricting the acceptance of unnecessary donated chemicals.

**SC3 Program Design:
Incorporating an EMS**

RCSD is developing an Environmental Management System (EMS) as part of their SC3 program.

An EMS is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. RCSD developed a full EMS for the School District in order to educate:

- ❖ Students on the District's "greener schools" initiative; and,
- ❖ District employees on how an EMS will result in responsible chemical management and a safer workplace.

This program was expanded using EPA SC3 funding. RCSD estimates that the SC3 funding allowed the removal of 800 pounds of solid hazardous waste and 1,300 gallons of hazardous liquids from the District chemical storage facility. Thirteen secondary schools underwent chemical inventories to identify excess chemicals for removal and disposal.

The project also supports and showcases intergovernmental working relationships between the City of Rochester, Monroe County, and the Rochester Institute of Technology. In addition, the relationships developed by this effort resulted in lower chemical disposal costs for the District.

For more information about the Rochester City School District chemical management initiatives, please contact Suzanne Wheatcraft of the Rochester City School District on (585) 262-8405 or Suzanne.wheatcraft@rcsdk12.org

-NORTH CAROLINA-

North Carolina Department of Environment and Natural Resources

Initiated through a grant from EPA, the North Carolina Department of Environment and Natural Resources (NC DENR) is piloting a program to remove chemicals from participating schools and provide technical assistance, training and guidance on responsible chemical management. Beginning in October 2006, NC DENR will conduct chemical cleanouts in 10-17 schools and work with those schools to improve the management of lab and maintenance chemicals. NC DENR will be training school personnel in the areas of progressive laboratory and maintenance chemical management, Green Chemistry, Micro Chemistry, and other preventive approaches for future chemical management. At the end of the pilot, the schools involved in the project should be able to better manage chemical waste streams in a timely, less expensive manner. The lessons learned from this pilot will help inform the design and implementation of future chemical management programs.

For more information on chemical cleanouts and future chemical management programs, please contact Elizabeth Cannon, Hazardous Waste Section Chief, Division of Waste Management, North Carolina Department of Environment and Natural Resources on (919) 508-8534 or at Elizabeth.Cannon@ncmail.net

North Carolina Total Science Safety Project

In 1995, North Carolina's Department of Public Instruction created the "North Carolina Total Science Safety Project." This is North Carolina's version of "The Total Science Safety System," a software tool produced in partnership with a private laboratory safety consultant. The software



assists schools in locating potential hazards such as improperly stored chemicals; implementing required safety guidelines; and, preventing avoidable accidents. This software is currently available for all school systems in North Carolina.

In addition to the chemical management software, in August 2005, the North Carolina State Board of Education passed the Science Laboratory Safety Policy that requires all schools to submit a Chemical Hygiene Plan by January 2006. Additionally, seminars were made

available for teachers, administrators, and other personnel that are involved in the school science safety program in order to minimize hazards and misinformation and liability issues while maximizing safety for personnel and students.

For more information on the North Carolina Total Science Safety Project, please contact Clara Stallin of North Carolina's Department of Public Instruction at (919) 715-1853 or Cstallin@dpi.state.nc.us

-NORTH DAKOTA-

In 2005, North Dakota Department of Health received funding from EPA that assisted high school chemistry and science facilities to initiate a chemical cleanout program. The North Dakota's school cleanout program resulted in:

- Two safe alternatives implemented to replace persistent, bioaccumulative, and toxic chemicals and/or manage high-risk chemicals;
- 28.5 pounds of mercury/mercury compounds removed;
- Nine schools participated in a school cleanout; and,
- 2100 students positively affected.

While the particular effort described above has been completed, the Department of Health continues to assist schools with their chemical cleanout projects.

For more information on North Dakota's chemical cleanout projects, please contact Robert Disney, North Dakota Department of Health, Environmental Health Section, Division of Waste Management, on (701) 328-5159 or rdisney@nd.gov

-OHIO-

Ohio EPA and the Ohio Department of Education implemented a \$2.9 million program to address hazardous waste removal needs in Ohio schools. The program was the first statewide program of its kind in the country and removed more than one million pounds of chemicals safely from 196 Ohio schools. Student safety and awareness dramatically increased. 90 percent of Ohio school districts agreed to participate. Schools saved an average of \$10,000 per building – money that would have been spent on a commercial cleanup service. Nearly 1,000 school officials and teachers also attended safety seminars regarding responsible management of chemicals and chemical waste.

For more information on Ohio EPA's cleanups, please visit the Ohio EPA Accomplishments Web page, located at: <http://www.epa.state.oh.us/accomplishments.html>

For more information about chemicals in Ohio schools, please contact Dr. Cliff Schrader, Director, Ohio Hazardous Waste Removal Program, on (800) 968-0132 or at Cliffs@summit.k12.oh.us. You may want to read his articles on the subject on the National Science Education Leadership Association Web page, located at: <http://www.nsela.org/publications/safescience/ss-article6.html> and the Catalyst Web page, located at: <http://www.thecatalyst.org/hwrp/pages/needs.html>

-PENNSYLVANIA-

In 2005 and 2006, the Northwest Tri-County Intermediate Unit, a school service organization, implemented the Safer Schools Initiative, which focused on conducting chemical inventories, cleanout, training, and policy development. The Initiative used existing information from the local health department to identify schools with violations to help determine the extent of the problem in schools. A representative from a local pollution prevention organization also educated the Intermediate Unit on the problems in schools.

The Initiative leveraged the expertise and resources of the Northwest Regional Office of the Pennsylvania Department of Environmental Protection to assist with reviewing chemical inventories. This review also helped to mitigate disposal costs by identifying substances that may not require a hazardous waste disposal contractor. The program successfully removed 267 pounds of hazardous materials from 16 schools, positively affecting 11,469 students. The program also included information about responsible chemical management activities such as the implementation of an in-service training program (teachers educated about chemical safety and green chemistry) and the establishment of stronger relationships between schools and businesses. The Intermediate Unit will continue to provide technical assistance and training as needed.

For more information on this initiative, please contact Lacey Maze, Northwest Tri-County Intermediate Unit, on (814) 734-8460 or lacey_maze@iu5.org

-RHODE ISLAND-

The Chemical Safe Schools Committee (CSSC) is a public-private partnership working to address chemical management issues in schools. The partnership includes the Rhode Island Departments

of Health, Education, Environmental Management (DEM), and Labor and Training; Brown University; Community College of Rhode Island; and the Rhode Island Committee on Occupational Health and Safety. The Committee's goal is to support schools and districts in minimizing health risks from chemicals through development of guidance materials, training and professional development opportunities, and the use of regulatory authority.

The CSSC successfully worked to incorporate a list of banned chemicals into the Rhode Island *Rules and Regulations for School Health Programs* in 2003. The Rhode Island Department of Health, on behalf of the Committee, used EPA SC3 funds to assist public and charter high schools with chemical removal. Only schools that have developed a Chemical Hygiene Plan were eligible for assistance. The Chemical Hygiene Plan must address chemical purchase, storage, disposal, personal protective equipment and contain an inventory. Greater consideration is also given to school systems that have a greater community need (defined as a percentage of students receiving free or reduced cost lunches).

Currently, the CSSC works to educate school personnel and others on chemical management issues. The Rhode Island DEM assists schools by providing technical expertise. DEM works with the Department of Labor, who has the authority to conduct school inspections, to share information on chemical management concerns at schools.

For more information on the Chemical Safe Schools Committee, please contact Bob Vanderslice, Rhode Island Chemical Hygiene Officer, Department of Health, Education, and Environmental Management on (401) 222-3424 or boby@doh.state.ri.us or Jim Ball at Rhode Island Department of Environmental Management on (401) 222-1360 or james.ball@dem.ri.gov

Brown University SEP

Brown University entered into a settlement agreement with EPA that included a Supplemental Environmental Project (SEP) that benefited four Providence area high schools. Brown agreed to pay a total fine of nearly \$80,000 and to fund SEPs at a total cost of \$285,596. Brown provided training to area high schools, assisted K-12 schools with managing their chemical inventories, removed 570 gallons of lab packed wastes, and brought micro-scale chemistry equipment to schools. A total of \$20,429 was spent for chemical removals from these schools.

For more information on the Brown University SEP, please contact Lisa Papetti of EPA Region 1 on (617) 918-1756 or Papetti.Lisa@epa.gov

-TENNESSEE-

Beginning in the fall of 2004, selected schools in Tennessee participated in the School Chemical Cleanout Campaign. The SC3 program was an expansion of a previous pilot program facilitated by the Tennessee Department of Environment and Conservation (TDEC) Division of Community Assistance's Green Schools Program. The Green Schools Programs stem from a partnership among TDEC, the Tennessee Science Teachers Association, the Tennessee Valley Association, Onyx Environmental, and the Tennessee Department of Agriculture.

TDEC's SC3 programs seek to reduce waste, eliminate outdated, unknown and unusable chemicals from schools, encourage environmentally sound use of chemicals in classrooms, bring cost savings to schools through responsible chemical management, and promote SC3 success state-wide. TDEC's programmatic components included lab chemical inventories, disposal, and teacher training. TDEC staff conducted numerous trainings and also partnered with a local university to develop a green chemistry handbook for teachers.

TDEC has been successful in reaching their goals and has even assisted school districts in other states with their SC3 programs. In total, 69 schools were cleaned out, with 23,000 pounds of hazardous chemicals removed. TDEC leveraged various EPA grant-funding sources by requiring schools to contribute funds based on their socio-economic status.

For more information on TDEC's SC3 programs, please contact Ken Nafe, Tennessee Department of Environment and Conservation on (615) 532-0281 or ken.nafe@state.tn.us. Information is also available on the Tennessee SC3 Web Page, located at: <http://www.tennessee.gov/environment/sc3/>

-TEXAS-

SC3 Results: Highlights from Ft. Worth Independent School District

- ❖ Removed 15,000 pounds of hazardous chemicals from 37 schools
- ❖ Implemented a district-wide system to maintain chemical inventories.
- ❖ Uses Material Safety Data Sheets to assist in proper handling, use, and storage of chemicals and to track chemical purchases.

In 2004, the Fort Worth Independent School District (FWISD) was awarded funding by EPA to enhance processes and procedures for the disposal of chemicals and hazardous waste, and waste reduction and management efforts. FWISD met those objectives through four major strategies:

1. Inventory system;
2. Disposal of chemicals;
3. Prevention program; and
4. Evaluation design.

FWISD conducted cleanouts at 15 high schools and 22 middle schools, resulting in the removal of 15,000 pounds of hazardous chemicals. FWISD also implemented a district-wide chemical inventory system that tracks Material Safety Data Sheets on all chemicals purchased. This system will help prevent unnecessary purchases both in terms of quantities and types of chemicals.

The FWISD SC3 program also had a training component. The training was aimed at the science director in each school, who is responsible for chemical management. The training encourages responsible chemical management practices such as use of lab kits to minimize risks and waste and limiting orders of high volumes of chemicals.

FWISD continues to support chemical management in schools. Schools can call the District for information if they have hazardous chemicals that need to be removed and disposed.

For more information on the Fort Worth Independent School District SC3 program, please contact George Reid of the Fort Worth Independent School District on (817) 871-2637.

-UTAH-

Chemical Safety Program for Utah Science Teachers

The Utah Department of Education has developed a draft document outlining the Chemical Safety Program for Utah Science Teachers. The primary goal of the program is to provide tools, training, and mentor support to Utah science teachers in matters of chemical safety. This program involves school support personnel, administrators at every level, and a variety of public safety services. Materials have been developed that will help teachers assess the chemical safety needs of their schools, find answers to questions, locate resources, develop safe laboratory strategies, teach safety to their students, document the progress of safety improvement, avoid legal problems through compliance with the law, and learn from the experience of others. Included is a program of on-going opportunities for training and teacher-to-teacher mentoring for all Utah science teachers who wish to participate. The draft document provides numerous resources for teachers, including lists of chemicals not recommended for classrooms, risk management questions, lab safety and first aid information, Chemical Hygiene Plans, and applications for state approved chemical management mentors.

For more information on Chemical Safety Program for Utah Science Teachers, please visit the Utah State Office of Education Web Page, located at:

<http://www.usoe.k12.ut.us/curr/science/safety/ChemSafetyProg.htm>

Utah Department of Environmental Quality (UDEQ) developed an Integrated Toolkit

The Utah Department of Environmental Quality (UDEQ) developed an Integrated Toolkit that assists Utah schools in implementing a school chemical cleanout. The Toolkit includes checklists for individual teachers; list of chemicals that need to be removed and reasons why; list of alternative chemicals and where to find them; chemical guidelines and best management practices for school labs and art classes; emergency procedures for chemical accidents; and preventative measures. The toolkit is available to on the UDEQ Web site at www.deq.utah.gov/schools

For additional information about the Integrated Toolkit, please contact Sonja Wallace, Utah Department of Environmental Quality on (801) 536-4477 or at SWALLACE@utah.gov

-VERMONT-

Vermont Department of Environmental Conservation (VT DEC) sponsored a school science laboratory chemical cleanout project for middle and high schools. A total of 83 middle and high schools were cleaned out, at an average cost of \$1,000 per school. Schools were assisted with conducting a chemical inventory, chemical disposal, and the establishment of safe chemical storage systems. Approximately 17,000 pounds of hazardous materials, 3,900 pounds of non-hazardous materials, and 156 pounds of mercury were removed from the schools.

For more information on the school science laboratory chemical cleanout project, please contact Thomas Benoit of VT DEC on (802) 241-3472 or Thomas.Benoit@state.vt.us The chemical removal report is available on the Vermont Mercury Education and Reduction Campaign Web Page, located at: <http://www.mercvt.org/PDF/finalreport.pdf>

-VIRGINIA-

Arlington Public Schools

When Arlington Public Schools (APS) suspected that it might have a problem with chemical management, it did not wait for an accident before it sprung into action. Instead, APS took immediate steps to protect over 8,000 secondary students and 800 staff from potential chemical exposures.

As a result of an Arlington school's discovery of outdated and unlabeled materials in a chemical storage room that had not been used for many years, in the summer of 2005, APS implemented an innovative chemical management program in its schools. APS conducted a comprehensive chemical inventory in all of its secondary schools that revealed several common chemical management problems, including accumulations of unnecessary, outdated, and unknown chemicals. With the help of qualified chemical management experts, APS discovered that, in addition to educationally valuable chemicals, its secondary schools also housed inappropriate materials, some of which were stored improperly—in alphabetical order, improper containers, and excessive amounts.

Since the summer of 2005, APS has removed more than 600 pounds of chemicals from its secondary schools. To ensure that similar chemical mismanagement problems would no longer pose a risk to students and staff, APS also implemented a sustainable chemical management program that includes:

- Coordination with a certified hazardous waste company;
- Identification and safe disposal of hazardous chemicals;
- Implementation of a chemical hygiene plan;
- Teacher chemical safety training;
- Bi-annual chemical inventories;
- Dedicated staff time for chemical management;
- Responsible chemical storage; and
- Plans for comprehensive chemical management, including science, shop, art and facilities chemicals.

With funding provided by the Arlington County School Board, APS selected one teacher within each of its secondary schools to be a Chemical Manager responsible for ensuring that these chemical safety considerations were fully integrated into teaching curriculum and facilities practices. In addition to the appointed Chemical Manager positions, APS conducts annual in-service teacher training on responsible chemical management, as well as bi-annual chemical inspections in each of its secondary schools. Wherever possible, teachers and staff are encouraged to use the smallest amounts of the least hazardous chemicals possible.

For more information about Arlington's chemical management program, contact Constance Skelton, Science Supervisor, Arlington Public Schools on (703) 228-6163 or cskelton@arlington.k12.va.us

-WASHINGTON-

King County, Washington's Rehab the Lab Program offered assistance, free of charge, to King County schools to manage their hazardous chemicals. The Program put chemical experts from the County's hazardous waste office in schools to train teachers about chemical storage and disposal. The program also helped teachers to think about which chemicals are actually needed and for what purpose the chemicals are needed. At the outset, there was some reluctance by school officials and teachers to dispose of the chemicals, stating that no funds were available to order replacement materials. However, in the end, most of them decided to participate in the program. Over a four-year period, the program cost \$560,000 and was primarily funded by surplus sewer and garbage collection fees. The program paid 100 percent of laboratory chemical disposal and partial assistance for removing art supplies and photo chemicals. In total, 39.5 tons of chemicals were removed.

The Program continues to provide education, assessment and advice aimed at school laboratories. The state provides matching grants to cover the cost of the initial site audit, collection and disposal costs, and teacher training. In addition, fully scripted lesson plans, chemical lists, and various informational brochures are available online. The King County program has not only served as a model for others in Washington, such as Thurston County, but to schools across the nation including Iowa, Missouri and Colorado.

For more information on King County Washington's Rehab the Lab program please contact Dave Waddell on (206) 263-3069 or Dave.Waddell@metrokc.com Additional information is found on the King County Government's Web site at: <http://www.govlink.org/hazwaste/schoolyouth/rehab/>

-WEST VIRGINIA-

Under a settlement agreement filed with the US EPA's Environmental Appeals Board, DuPont is committing \$1.25 million to be spent for a Supplemental Environmental Project (SEP) to implement the Micro-scale and Green Chemistry project at schools in Wood County, West Virginia. This three year long SEP will foster science laboratory curriculum changes to reduce risks posed by chemicals in schools. Using micro-scale chemistry, which reduces exposure to chemicals, and green chemistry, an approach that uses safer chemicals, the project will reduce risks to student's health and enhance science safety in all of the participating schools.

For more information on DuPont's SEP, please contact Dave Ryan in EPA's Office of Public Affairs on (202) 564-4355 or ryan.dave@epa.gov Information about the SEP is available from EPA's Newsroom Web site at: <http://yosemite.epa.gov/opa/admpress.nsf/198a007cc57e64d3852570210055f3f6/fdcb2f665cac66bb852570d7005d6665!OpenDocument>

-WISCONSIN-

EPA in partnership with the Wisconsin Department of Public Instruction (DPI) targeted schools in the Green Bay/Oshkosh area to participate in the School Chemical Collection Program. The main focus of the program in Green Bay/Oshkosh was to reduce chemical waste, promote the safe management of chemicals, and promote environmentally preferable purchasing of laboratory chemicals. A total of 57 schools participated in the Chemical Collection Program out of an approximate 233 eligible schools.

The chemical collection took place at a location provided by the Winnebago County Solid Waste Coordinator. Chemicals were received from the 57 schools on the collection day. Representatives from the participating schools transported their chemicals to a drive-through maintenance building where the chemicals were segregated and packaged by a waste management company for transportation to an EPA approved off-site disposal facility. The School Chemical Collection Program resulted in the collection/disposal of approximately 1,982 pounds of various chemicals.

For more information on Wisconsin's Chemical Collection effort, please contact Janet Haff of EPA Region 5 on (312) 353-7923 or at haff.janet@epa.gov

Wisconsin Green and Healthy Schools Program

Wisconsin Department of Natural Resources developed a Web-based, self-paced and voluntary program available to all Wisconsin public and private elementary, middle, and high schools. The program is designed to support and encourage schools in their quest for a healthy, safe, and environmentally-friendly learning environment. Requirements for the Green and Healthy Schools Program include becoming virtually mercury free and improving chemical management.

For more information on Wisconsin's Green and Healthy Schools efforts, please contact Jackie Hanzal, Wisconsin Department of Natural Resources, on (608) 264-6028 or jacqueline.hanzal@wisconsin.gov or Elizabeth Kane, Wisconsin Department of Public Instruction, on (608) 266-2803 or elizabeth.kane@dpi.state.wi.us Information about Wisconsin's Green and Healthy Schools Program can also be found on the program's Web page, located at: <http://www.dnr.state.wi.us/org/caer/ce/greenschools/>

-WYOMING-

The Wyoming Department of Education (WDE), with funding from EPA, has implemented a program to assess, remove, dispose, and prevent the future accumulation of dangerous chemicals in school laboratories. The initiative, which builds on existing WDE partnerships with school Districts, requires schools to cover 49 percent of the cost of chemical removal, while WDE covers the remaining costs. The cornerstone of WDE's approach advocates giving schools ownership of chemical management, cleanout, and the institution of responsible chemical management. The success of the program has served as catalyst for other school Districts. Over 6,000 pounds of hazardous material has been collected and responsibly disposed from 31 school districts. WDE has recently received funding from EPA Region 8 to reimburse schools for the proper collection and disposal of hazardous chemicals.

Wyoming has guidelines governing chemical management and prevention that are currently being revised and updated. WDE is developing plans to coordinate with statewide emergency responders to increase awareness on chemical management in schools.

For more information on the Wyoming Department of Education's chemical management initiative, please contact Bruce Hayes of the Wyoming Department of Education on (307) 777-6198 or bhayes1@educ.state.wy.us You may also contact Matt Langenfeld, EPA Region 8 at langenfeld.matthew@epa.gov

APPENDIX

- MERCURY REMOVAL PROGRAMS -

Ultimately, it is important to address all dangerous chemical hazards in K-12 schools through a chemical management program. However, it is also important that SC3 programs remain flexible to meet the unique circumstances of each school district. There are a number of programs that focus on the removal of mercury from schools and provide education on proper mercury management. A few examples are provided below. These school programs are aimed at increasing and promoting mercury recycling, improving mercury management in schools, and educating teachers and students about mercury.

For more information about Mercury management, please visit EPA's State Mercury Schools Program Web page, located at: <http://www.epa.gov/epaoswer/hazwaste/mercury/school.htm>

Massachusetts Material Separation Plans

Material Separation Plans (MSP) must be submitted to MassDEP for approval every other year by hazardous waste combustors. Each MSP contains a program element for mercury cleanouts in schools. These facilities perform outreach to the schools and provide education and funding to reduce mercury, including the replacement of mercury-containing devices with non-mercury alternatives.

For more information visit: <http://www.mass.gov/dep/recycle/solid/mspcomp.htm>

Minnesota Mercury Free Zone Program

The Minnesota Mercury Free Zone Program is designed to reduce potential mercury exposure in middle and high schools and to prevent mercury from polluting the environment by eliminating it from schools and providing education about the dangers it poses. The Program uses Clancy, a specially trained mercury-detecting dog, to help schools discover spilled and unknown sources of mercury.

For more information about the Mercury-Free Zone Program, please call Carol Hubbard, MPCA mercury educator, at (651) 282-2604 or e-mail her at carol.hubbard@pca.state.mn.us More information is available also at: <http://www.pca.state.mn.us/programs/mercury-free/> and <http://www.pca.state.mn.us/publications/p-p2s4-01.pdf>

Northeast Waste Management Official's Association

The Northeast Waste Management Official's Association (NEWMOA) is a non-profit interstate association that has a membership composed of the hazardous waste, solid waste, waste site cleanup, and pollution prevention program directors for the environmental agencies in New England, New York and New Jersey. Beginning in January 2001, the MassDEP and the Massachusetts Executive Office of Environmental Affairs (MA EOEA) funded NEWMOA to assist in identifying and removing elemental mercury and products containing mercury from schools. NEWMOA has removed approximately 1,077 pounds of mercury from 165 Massachusetts schools. This included 5,607 lab thermometers, 1,312 fever thermometers, 171 sphygmomanometers, 111 barometers, and 790 pounds of elemental mercury.

For more information, please visit NEWMOA's Mercury In Schools and Communities website, located at: <http://www.newmoa.org/prevention/mercury/schools>