

MD Environment

Maryland Department of the Environment

February 1998

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Governor outlines plan to fight *Pfiesteria* & improve water quality

As briefly outlined in Governor Parris N. Glendening's recent State of the State address, this year's legislative package and budget contain many initiatives to improve water quality. These initiatives are designed to prepare the state for a recurrence of the events of last summer as well as lessen the possibility of similar outbreaks in the future. In large part, these initiatives are based on the recommendations of the Governor's Blue Ribbon Citizens *Pfiesteria* Action Commission, which was chaired by former Governor Harry Hughes.

Preparing Maryland for a Possible Recurrence of *Pfiesteria* Human Health

Maryland's efforts to study the impact of *Pfiesteria*'s toxins on humans placed the state as a national leader on this issue. Last summer, the Department of Health and Mental Hygiene established a surveillance system to gather information about human illnesses that may be related to these toxins. The Department will



Photo by Michelle Armiger, MDE.

continue that surveillance system and maintain a central registry of all possible and confirmed cases of clinical manifestations of toxicity from *Pfiesteria*. Information collected in the registry will be used to initiate appropriate epidemiological studies. The Department will also enhance its

outreach efforts to physicians to provide information about the symptoms of exposure to *Pfiesteria*'s toxins in order to ensure that possible cases are properly treated and reported.

The Department will perform these functions within existing resources

Milestone Agreement To Be Signed Between State and the EPA

By Bob Hoyt and John Mitchell

A milestone performance partnership agreement will soon be signed between the Maryland Departments of the Environment and Natural Resources, and the U.S. Environmental Agency (EPA) that will improve the effectiveness of Maryland's environmental programs and strengthen state/federal relationships. The Agreement is a comprehensive strategic plan that identifies the state's important environmental goals, describes the programs in place to achieve those goals, and establishes ways to measure progress. This process is an essential first step in determining whether there are better ways to achieve our environmental goals. If there are, subse-

quent Agreements with EPA could authorize the necessary flexibility to implement the needed improvements and lead to the authorization of multi-year grants, reduced paperwork, more effective EPA assistance and other significant benefits for Maryland and our environment.

The Environmental Partnership is a component of the National Environmental Performance Partnership System (NEPPS). EPA, with input and encouragement from the states, created NEPPS in 1995 as a new approach designed to provide greater flexibility, improved environmental results, administrative savings and strengthened partnerships between the

states and the EPA. Many states see performance partnership agreements as a way to rely less on activity based requirements, i.e., the number of inspections, site visits, compliance assistance, and enforcement activities, and more on measuring environmental and public health improvements. To date, over 30 states have signed performance partnership agreements.

As an added benefit to Maryland, the participating state agencies have incorporated the performance partnership Process into Governor Glendening's Managing Maryland For Results benchmarking requirements

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Environmental Partnership Agreement

for improving services to Marylanders. The process also is consistent with the Maryland General Assembly's directive to improve various units of measurements and to focus management toward environmental and public health outcomes. These strategic projects were combined into one comprehensive effort because they all are based on results based planning.

The Performance Partnership process has unfolded over the past year and half in Maryland. In addition to MDE, DNR and EPA, the Maryland Department of Agriculture (MDA) has also participated by investing significant time and resources to ensure a successful effort. First, the agencies drafted the goals and indicators document which identified the state's public health, environmental, and natural resource goals and established indicators to measure progress. Next, the agencies assessed their program's track record at achieving the goals and finally, developed a work plan that aligns program activities with goals.

It is important to understand that during the first year of the Partnership, the State agencies will not be doing anything different. Over the past year and a half, the agencies have been developing a clear idea of their environmental and public health goals and obligations and evaluating how well the state's activities and programs line up with these goals. During the upcoming year, programs will be analyzed with the mission of determining how we can be more effective in achieving our goals.

To ensure the highest level of public involvement, MDE, DNR, MDA, and EPA held two sets of public meetings throughout five regions of the state. Additionally, the agencies' stakeholder groups received frequent briefings and provided invaluable feedback. As the Performance Partnership continues, the agencies will seek to increase the level of public participation.

"Citizens have been asked to play an important role in developing the Agreement that is unprecedented in any other state. Public involvement in Maryland's efforts to restore and protect its valuable natural resources is absolutely essential if these efforts are to have any hope of success," said Secretary of Environment Jane T. Nishida. "Individual citizens must be fully informed, their opinions elicited and concerns heard."

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Pfiesteria Plan

and will coordinate its work with the University of Maryland and Johns Hopkins University as necessary. The Department will also continue its efforts to work with the Centers for Disease Control's ongoing projects pertaining to *Pfiesteria*-like organisms and harmful algal blooms.

Seafood Marketing

Maryland's seafood industry was negatively impacted by the perception that it was unsafe to eat fish from Maryland waters. Governor Glendening authorized the expenditure of \$500,000 in FY98 for a marketing effort to restore consumer confidence in the state's seafood. This effort proved to be a tremendous success. The Governor's FY99 budget will include \$500,000 to continue this effort. In both FY 2000 and FY 2001, the Governor intends to provide \$250,000 for this purpose.

Rapid Response Teams

The state's toll-free hotline to inform the state about possible *Pfiesteria* outbreaks worked well. It allowed the Department of Natural Resources (DNR) to respond quickly to potential problems. The Governor's budget contains \$1 million and several positions to continue both the hotline and the Department's rapid response teams. These teams go to the site of possible fish health problem, and sample fish, sediment and water quality to determine if the fish health problems pose a risk to human health. Their sampling information provides the state with the data needed to comply with the protocol for closing and opening rivers.

Environmental Monitoring

The Governor's FY99 budget includes \$630,000 and 6 positions to allow the Department of the Environment to evaluate the magnitude of various sources of environmental pollution in affected watersheds. MDE will monitor nutrient and toxic pollution from regulated point sources and nonpoint sources including agricultural, urban and residential areas.

Research

Pfiesteria-like organisms and other harmful algal blooms are a problem across the country. The federal government has appropriated approximately \$13 million to conduct research on harmful algal blooms. A Request for Proposal for \$4 million of the federal funds for biological

and environmental research on *Pfiesteria* has already been released the Environmental Protection Agency and the National Oceans and Atmospheric Administration.

The Governor supports the role of the federal government as coordinator of research on harmful algal blooms. The Governor's budget will contain a one-time appropriation of \$800,000 (budgeted in the Department of the Environment) to provide our Universities and research institutions with important seed money to assist in their competing for these federal research grants.

Water Quality Initiatives

The best available scientific evidence indicates that elevated nutrient levels contribute to the development of *Pfiesteria*, *Pfiesteria*-like organisms and other harmful algal blooms. We have long been aware that nutrients are, in general, detrimental to water quality.

The Governor's package acknowledges that all of us contribute to nutrient loading in the Chesapeake Bay and its tributaries. The Hughes Commission recommended a multi-source approach to solving this problem. The Governor will propose legislation, appropriate money and refocus agency resources to reduce the amount of nutrients that end up in our waters.

The Governor will establish an Oversight Committee, as recommended by the Hughes Commission. This group will oversee the development of alternative uses of manure; oversee the implementation of appropriate nutrient management programs and best management practices; work with interested groups and state agencies and; prepare semi-annual reports on their progress.

Sewage Treatment Plant Upgrades

Biological nutrient removal (BNR) cost-sharing is an essential element of the state and local approach to achieve the Chesapeake Bay 40 percent reduction goal of reducing nitrogen from point sources. The Governor's five-year capital budget program will be adjusted to implement BNR upgrades at all 14 targeted sewage treatment plants on the Eastern Shore within 3 years and all remaining eligible sewage treatment plants statewide within five years.

In order to complete the necessary upgrades on the Eastern Shore, additional funds were added to the FY99 capital budget. A total of \$6.9 million will be spent this year to

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Pfiesteria Plan

upgrade sewage treatment plants on the Eastern Shore.

Nutrients From Non-Point, Non-Agricultural Sources

Lawn fertilizer. The administration will develop and coordinate an educational campaign to inform homeowners of the proper method of applying fertilizer in order to minimize runoff. Too often, homeowners over apply fertilizer or apply fertilizer improperly. This can result in nutrient runoff which finds its way to our waterways. The Governor's legislative package will also require all nutrient applicators to be certified. Further, it will permit the application of fertilizers on large tracts of land, such as golf courses, and state-owned land only in accordance with the nutrient needs of the turf.

Septic systems. It has been estimated that 80 percent of nitrogen from septic system effluent reaches groundwater and that as much as 6 percent of the total nitrogen entering our surface waterways originates from septic systems. Current septic system regulations focus on bacteria, not nitrogen runoff. The Governor has instructed the Department of the Environment to work with local governments to develop best management practices for new septic systems in order to achieve nitrogen reduc-

tions.

Agricultural Sources

Timing. The Governor's legislative package includes the recommendation of the Hughes Commission that all farmers be enrolled in phosphorus-based nutrient management plans by 2000 and that these plans be fully and demonstrably implemented, subject to penalties, by 2002. These plans will be collected in a central repository by the Department of Agriculture. The Governor's FY99 budget includes 11 Evaluation Teams consisting of MDE and MDA employees to evaluate the

and the University of Maryland Cooperative Extension Service. For 3 years, the budget will contain \$1.5 million a year to provide cover crop assistance on the Eastern Shore, the region of the state with the most concentrated agricultural operations and where we experienced a problem with toxic *Pfiesteria*.

This year's budget includes \$5.9 million in the MACS cost-share fund to help farmers construct manure storage sheds and dead bird composters. Consistent with the recommendations of the Hughes Commission, MACS eligibility will be

expanded to farmers who use manure but do not grow animals. A newly created Linked Deposit Program will assist farmers in rapidly securing low-interest loans for their portion of cost-share projects.

Transitional tax credit. Farmers who currently apply manure to fields that are high in phosphorus will

most likely incur an additional cost for fertilizer if the phosphorus-based nutrient management plan reveals that they can no longer spread manure. The Governor's bill will contain a transitional tax credit to help defray costs. Each farmer will be eligible to receive the credit for 3 years.

Manure disposal assistance.

Farmers who apply animal manure to their land will also need assistance to properly dispose of manure. The plan

establishes an Animal Waste Technology Fund that will contain \$1 million a year for 3 years and will be used to help the private sector develop and market technologies for alternative uses of animal manure.

Use of the phytase enzyme. The Governor's bill will require the use of the phytase enzyme, which reduces the amount of phosphorus in chicken manure, in all chicken feed by January 1, 2000. The budget includes \$350,000 to cost-share in the capital cost of preparing feed mills to use the enzyme.

Penalty provisions. As is the current practice, the departments of Agriculture and the Environment will work with farmers to achieve compliance with nutrient management plans. The Governor's bill includes several penalties that can be used if a farm is noncompliant. Possible sanctions are civil penalties, the recovery of MACS cost-share expenditures and a limit on the expansion of the farm operations of a noncompliant farm.

Research projects. The Governor's budget includes \$800,000 for three years to conduct research projects designed to reduce nutrient loading in the Bay and its tributaries. As the Hughes Commission noted, in several areas Maryland cannot wait for national research to be completed. It is anticipated that immediate research will be needed on issues such as alternative uses of manure, animal nutrition and agronomic practices. This research funding is budgeted in the Department of the Environment and will be distributed to Maryland Universities and research institutions.

"Our plan is based on the most current and through medical and scientific research available. And it is the best and most comprehensive approach to alleviating this problem. I ask that all of us come together to solve this problem. We must rise above political differences. We are all Marylanders first and foremost. We must act accordingly."

*Governor Parris N. Glendening
State of the State Address
January 21, 1998*

nutrient reduction practices on each farm. The goal is to evaluate each farm once every 3 years.

Assistance to farmers. Farmers will need assistance to develop and implement these plans to achieve nutrient reduction. The Governor's budget contains an additional \$2.8 million and 20 positions to provide educational and technical assistance through the Department of Agriculture, local Soil Conservation Districts

El Niño and Emergency Preparedness in Maryland

by Visty Dalal and George Harman

The El Niño weather phenomenon has been blamed for a number of odd occurrences from the recent devastating ice storms in the northeast to the torrential rainstorms in the west. El Niño is a disruption of the ocean-atmosphere system in the tropical Pacific, causing warm currents along the west coast of the Americas, and having important consequences for weather around the globe, and here in Maryland

Normally, northeasterly trade winds off of Peru and Ecuador blow warm tropical waters towards Asia, and allow cold, nutrient rich waters to upwell along the Pacific coast of the Americas. However, when the trade winds weaken, conditions reverse themselves, and warm tropical waters pile up against the West coast of the

Americas. During a strong El Niño event, the Asian nations are more likely to experience drought conditions and the Americans tend to receive higher than normal amounts of precipitation. The U.S. is expected to experience warmer than normal conditions in the northwest, wetter conditions across the southern states, and drier conditions in the Ohio valley.

On average, Maryland is expected to experience normal temperatures and precipitation. The benefits of El Niño in Maryland are a decreased risk of hurricanes, severe thunderstorms, tornadoes and their associated flood-

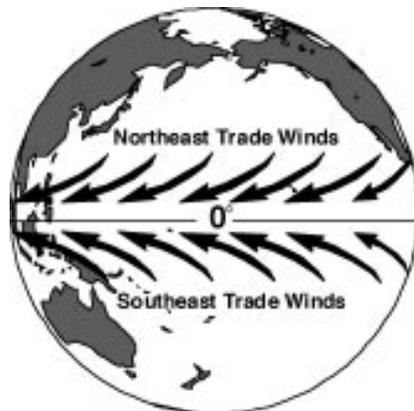
ing. However, major snowstorms have twice the chance of occurring, largely the result of a tendency for more coastal storms.

"There is...an increased risk of 'Noreaster' storms that can cause shoreline flooding and erosion, and the potential for a major snowstorm," said Barbara McNaught-Watson, Warning Coordination Meteorologist with

the National Weather Service in Sterling, Virginia. Although these conditions may not occur, they are more likely than in non-El Niño years.

In response to this increased

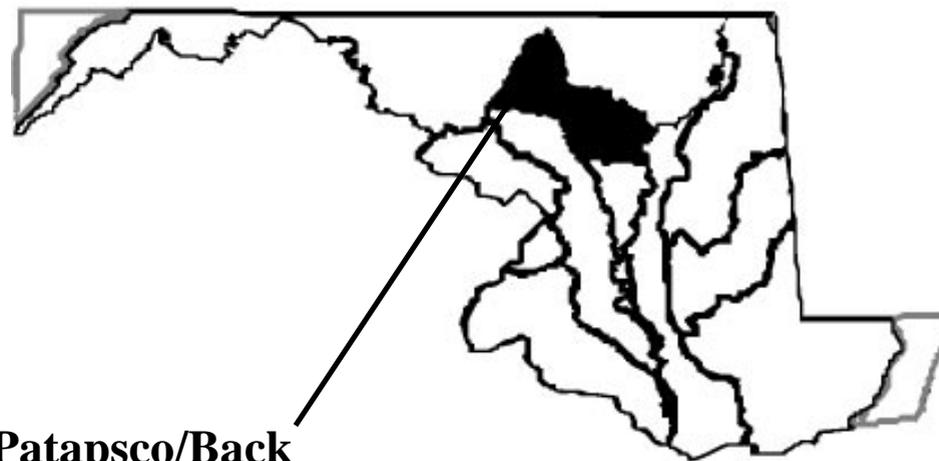
potential for major snowstorms Governor Glendening directed the Maryland Emergency Management Agency (MEMA) to develop a Readiness Action Plan for El Niño. MEMA is coordinating with the Maryland Department of the Environment, other state emergency response agencies, county governments, and private emergency response groups in Maryland. MEMA's plan includes the creation of an El Niño monitoring and coordination group; enhancing emergency response exercises related to coastal storms; refining MEMA's existing Internet website (www.mema.state.md.us); requesting an increase in the Catastrophic Event Fund; and establishing a toll-free phone number (800-422-8799) for citizens to access important information.



Maryland's Tributary Strategy Teams

Maryland's Tributary Strategy Teams were created in 1994 and charged with the gargantuan task of implementing tributary strategies to meet the 40 percent nutrient reduction goals set initially by the 1987 Chesapeake Bay Executive. Recognizing that what works in one geographic area may not work for another, teams were assigned to focus on individual basins. The ten teams consist of a cross section of Marylanders appointed by the Governor including business, community, agricultural, local government and environmental organization representatives, all who live in the area in which they volunteer. Monthly meetings are held by each of the teams to look at how Maryland can answer the pleas of a stressed Chesapeake Bay ecosystem.

For the next ten months, *MDEnvironment* will feature updates from these ten tributary teams. Contributing writers from the teams will focus on their basin and the strategies being reviewed which will move Chesapeake Bay Watershed protection into the 21st century.



Patapsco/Back
River Basin

Progress in the Patapsco/Back: An Update

by Wayne Jenkins
& Rich Eskin, MDE

The Patapsco/Back River Tributary Strategy Implementation Team, or Trib Team, promotes Maryland's nutrient reduction goals for the Patapsco River and Back River watersheds. The strategy recommends a variety of point and nonpoint source controls to achieve reductions in nutrient loadings. Strategies for controlling nutrients, namely nitrogen and phosphorus, have been established for each of the ten major basins in the state that drain to the Chesapeake Bay. Given the urban nature of the Patapsco/Back watershed, this team has focused on point source, stormwater management and stream restoration issues as priorities.

Last year, the team cosponsored a conference on the financing of environmental mandates for local governments. Over 70 attendees helped form the consensus that a workgroup was needed to address stormwater funding issues on a regional basis. After writing local elected officials suggesting that the Baltimore Metropolitan Council (BMC) create such a group, plans began to form the BMC financing workgroup. The team will work with the BMC and continue to highlight this important issue. Other activities of the team include oversight of a Clean Water Act Section 316 grant received last year. Working through Baltimore County and the State Highway Administration, the team is

analyzing data from stream restoration projects across the Piedmont region to identify ways that stream restoration designs in the Patapsco/Back watershed can be improved.

Local jurisdictions that wish to implement flexible design criteria for more liveable and environmentally friendly communities often find that existing laws and regulations can be stifling. To identify solutions to this problem, the Patapsco/Back team will host a workshop in Woodlawn on February 27. "Designing for Liveable Communities and Healthier Watersheds: Rewriting the Rules," will identify areas where regulations need to be adjusted and reviews coordinated to achieve multiple goals. It is the teams hope that attendees can help solve this complex problem. The workshop is

open to the public. Please contact Catherine Rappe at (410)857-2150. The team also is planning to reach out to state senators and delegates to educate them on the team's activities in restoring the Bay. The focus of this effort will be a reception for the local delegation to take place during this legislative session.

The Patapsco/Back team is making a difference in the helping to restore the Chesapeake Bay. The Team meets monthly and all meetings are open to the public. Visitors are welcome and encouraged to participate. If you would like to find more about the Patapsco/Back Team, visit the Tributary Strategy website at <http://www.dnr.state.md.us/Bay/tribstrat.html> or call Wayne Jenkins at (410) 631-3578.

National Dam Safety Program Act Implementation

After nearly six years of congressional campaigning and lobbying, the Association of State Dam Safety Officials (ASDSO) is celebrating the passage, funding and implementation of the National Dam Safety Program Act of 1996. Ninety-five percent of the United States 75,000 dams are regulated by individual states. This important program supports state dam safety efforts by providing training for state dam safety engineers, incentive grants to improve state's programs and funding for technical and archival research to develop improved techniques for evaluating, monitoring and rehabilitating dams.

Brad Iarossi, MDE's Chief of the Dam Safety Division and current ASDSO President -Elect, has been the Chairman of the Legislative Committee and has spent many hours in Washington D.C. seeking support for

the program.

"Implementation of this program will provide valuable training for Maryland's dam safety engineers that otherwise would be too costly to attend," said Iarossi. "It will advance dam safety research and provide modest grant funds to improve Maryland's dam safety programs."

Senator Christopher "Kit" Bond (D-Missouri) was instrumental in sponsoring the Act and in securing the full funding. Senator Barbara Mikulski of Maryland, ranking minority member, David Bowers and Sally Chadborne of her staff, and Peter Kyriacopolous of Governor Glendening's Washington Office provided local support. Senator Mikulski was invaluable in obtaining full funding of \$2.9 million during budget reductions, downsizing, and heavy competition for limited funds.



Brad Iarossi, President -elect of ASDSO (left) and Brian Long, current president (right), present an award of appreciation to Senator "Kit" Bond from Missouri (center.)

The Gunpowder Watershed Project

by Chris Nagle

The Gunpowder watershed which spans Baltimore, Carroll, Harford Counties and York County, Pennsylvania has a drainage area of 303 square miles and provides an average of 180 million gallons of drinking water per day for the Baltimore Metropolitan Region. In spite of extensive rural conservation zoning, there are continuing pressures for additional suburban development in the watershed. Local residents, voicing their concerns about the impact of continued development, urged the governments involved to make a change. The result is the Gunpowder Watershed Project, a three year study designed to use the strengths of federal, state and local agencies in partnership to address major issues impacting this key regional resource.

The project is the first study of its kind to assess source protection, stormwater, National Pollutant Discharge Elimination permits, and growth issues and the link between the Safe Drinking Water Act and the Clean Water Act. The focus of the project is on assessing the condition of Loch Raven and Pretty Boy Reservoirs as sources of drinking water, evaluating stormwater impacts to surface water quality, and assessing potential impacts from land use changes.

The concept of watershed planning is an effective way to link environmental programs in a geographical area. The Gunpowder study represents an ambitious project that will depend on continued community support to ensure its success. To establish this community involvement, a public participation committee has been formed with residents from throughout the Baltimore Metropolitan Region. Advice and input into the project's direction, development of public educational opportunities, and integration of residents' concerns, are some of the tasks these project partners

will undertake. The committee also will help also to identify additional funding sources to complete all aspects of the proposed study.

Five significant source water protection goals have been identified: 1) Determine the rate of reservoir sedimentation, significant sources, and the impact on reservoir storage and treatability of raw water; 2) Relate the tributary loadings to a decrease in dissolved oxygen, water quality parameters and algal dynamics; 3) Measure pathogen contamination in feeder streams and different reservoir locations and evaluate the reservoirs as a treatment zone; 4) Characterize potential risk to reservoirs from toxics, spills, or run-off and identify high risk locations to improve emergency response; and 5) Determine level of disinfectant by-product precursors and the most effective methods for reducing potential formation.

There is a pressing need to evaluate the contributions of loadings from nonpoint sources (urban stormwater and agricultural run-off) within the watershed. Additionally, the data gathered from this monitoring effort will be used to determine current watershed conditions and establish future improvement.

The habitat value and recreational opportunities within the drainage basin and the need to protect this valuable water supply make the Gunpowder watershed ideal for use as a model for watershed assessment and planning. The ultimate goal of the project is to develop a process that can be used to create a national model for the cooperative performance of watershed assessment and planning by incorporating close coordination between all levels of government and the public.

For more information contact John Grace at (410) 631-3714.

New Environment/Education Partnership Spotlights Compliance Assistance

by Marie Halka

The Maryland Business and Industry Compliance Assistance Project was launched in December as a cooperative effort between the Maryland Department of the Environment (MDE), the Maryland Higher Education Commission (MHEC), and several Maryland community colleges to provide Maryland businesses and industries with the necessary training tools to help Maryland businesses comply with Maryland's environmental regulations.

The project is a three-year grant-funded project to develop compliance training materials such as videos and technical guides for use in a series of regional workforce training sessions. The sessions will be tailored to address one or more priority compliance training needs for a given business sector. At present, six sectors are involved including aggregates production, ready-mix concrete, home-building, marinas, printing, and paper manufacturing. At a December workshop, participants brainstormed about what compliance issues should be considered priorities to address in the creation of training materials and sessions for each participating busi-

ness sector. In the coming months, MDE, in cooperation with MCET and participating community colleges will develop more detailed training objectives and materials for each of the participating business sector's compliance training effort based upon the outcomes of the brainstorming sessions.

In addition to MDE and MHEC, co-sponsors of the workshop included the Maryland Chamber of Commerce, the Department of Business and Economic Development, and the Maryland Center for Environmental Training (MCET) of Charles County Community College, with funding provided by the U. S. Environmental Protection Agency (EPA). Participating community colleges include Charles County Community College, Allegany College of Maryland, Anne Arundel Community College, the Community Colleges of Baltimore County (Catonsville), Chesapeake College and Wor-Wic Community College. Montgomery College has also voiced support for the MBICAP effort.

For more information about MBICAP, or to become a participating community college, contact Marie Halka (MDE) at 410-631-3560.

P2 AND WASTE MINIMIZATION

by Neil Thompson

If there was a simple, cost-effective, faster and more environmentally sound approach to any business situation, it stands to reason that most companies -- big or small--would take advantage of the cost savings, reap the benefits of the efficiency, and publicize their new and improved "greener" way of thinking. Smart companies all across Maryland are doing just that by participating in voluntary programs such as the Maryland Department of the Environment's pollution prevention/(P2)waste minimization programs and training.

Maryland law requires that all hazardous waste generators take steps to minimize their waste. MDE also has made commitments to emphasize and promote p2/waste minimization in the U.S. Environmental Protection

Agency (EPA) Resource Conservation and Recovery Act Grant.

P2/waste minimization efforts for hazardous waste currently are focused on companies in the Patapsco-Back River basin that generate 25 tons or more of hazardous waste a year, produce waste that contains at least one of a list of chemicals that are persistent, bioaccumulative, and/or toxic (PBT), and the site is located in an area of concern. MDE staff have a GIS mapping system to assist in the identification of this priority list of generators.

MDE staff conduct site assessments to determine the status of the generator's P2 efforts and measures the generator's progress in accomplishing source reduction, waste minimization and recycling of hazardous waste. Reports are received

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P2

from the Hazardous Waste Program staff concerning the status of P2/waste minimization efforts at generator sites where compliance evaluation inspections have been conducted. Follow up visits are then conducted to provide guidance to the generator and identify areas where P2/waste minimization can be achieved.

In addition, MDE maintains a technical clearinghouse of new products and technologies useful for hazardous waste reduction. The department also shares with the EPA in their analysis of regulatory concerns which would facilitate waste minimization. Throughout the watershed basin, basic changes are being made in the way these companies do business and generate hazardous waste because of these new waste minimization ideas. One company now uses computerized inventory management systems to track and maintain information on the purchase, use and disposition of materials and supplies. This practice avoids out-of-date raw materials and minimizes their disposal. Another business installed new solvent recovery units to recycle and reuse solvents several times before disposing. In manufacturing industries less or non-toxic raw materials are being substituted for chemicals that are considered hazardous. For one company simply improving equipment cleaning techniques to reduce the volume of water used and wastewater

generated reduced the amount of total waste produced. Retrofitting a production line so that precise amounts of raw materials are added by machine instead of manually will increase precision and avoid off specification batches that eventually have to be disposed of.

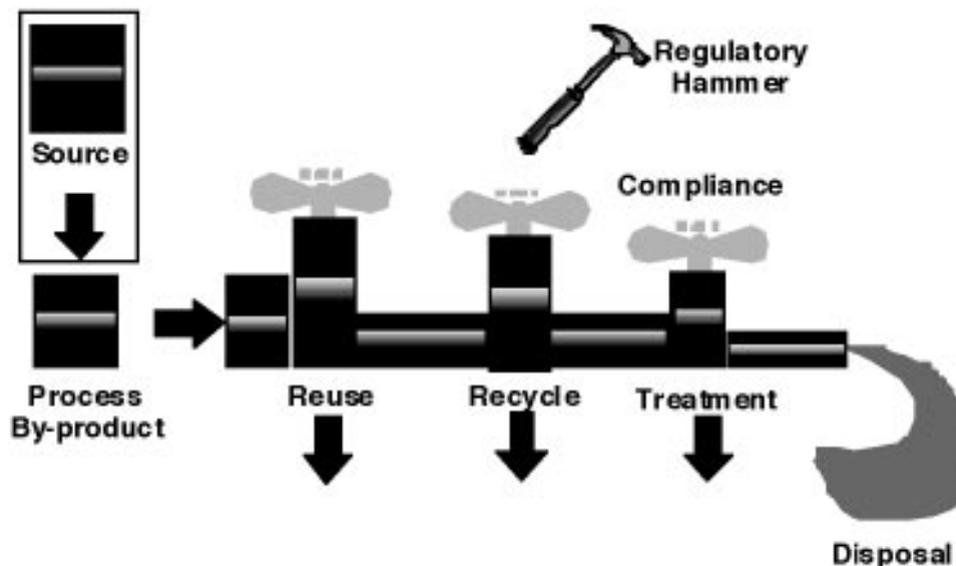
MDE staff has worked with large quantity generators in; developing P2/waste minimization plans; recommending treatment processes to reduce volume and/or toxicity of hazardous waste streams (such as neutralization of acid/base waste to lower disposal costs; use of evaporators to reduce volume of aqueous waste containing heavy metals; installation of membrane technologies which reduce considerably the concentration of suspended solids,

organic compounds or metals in aqueous waste streams); implementing good housekeeping procedures and improving operational practices to avoid spills and bad batches and evaluating the use of aqueous-based cleaners rather than solvent-based products.

The above P2/waste minimization practices benefit industries through substantial cost savings in hazardous waste disposal, reduce their environmental liability, reduce governmental/regulatory concerns, and improve working conditions and the environment.

If your company wants to get in on this new, greener way of thinking (and save some money in the bargain), please contact Alvin Bowles at (410)631-3441.

Waste Minimization Management Practices



Maryland Tawes Award For A Clean Environment



Individuals and organizations are encouraged to submit nominations for the 1998 Tawes Award For A Clean Environment, co-sponsored by the Maryland Department of the Environment and the Maryland Petroleum Council. Anyone who has worked to enhance or protect Maryland's natural resources and environment is eligible to enter. Activities may involve conservation, ecology, recycling, education projects, pollution prevention, or environmental emergency response. Awards are divided into two categories: youth and adult. Winners will receive a small cash prize for their favorite non-profit and a certificate of appreciation presented at an early spring awards luncheon.

The entry form is easy to fill out and can be requested by calling the Maryland Department of the Environment at (410) 631-3012 or the Maryland Petroleum Council at (410) 269-1850.

Toxic chemicals in the environment: Evaluating the risk to human health

By Phil Heard

Are there toxic chemicals in my drinking water, in my community river or at a nearby abandoned waste site? Are these toxic chemicals at dangerous levels? What risk am I taking if I eat, drink, or breathe these contaminants? Will I get sick? Is environmental cleanup needed? How much contamination is too much?

It is the Maryland Department of the Environment's (MDE) responsibility to answer these questions through a process called risk assessment. Risk assessment identifies the potential adverse effects to humans or ecosystems resulting from exposure to environmental hazards. In practice, risk assessment means that raw data are put into a practical form, ready for use by decision-makers.

Risk assessment is used to set

remediation goals for Superfund sites, brownfields and other sites subject to some type of pollution impact. It also is an invaluable tool for responding to calls from the community when an evaluation of health risk can allay fears or signal a need for action.

There is a four step process to evaluate the threat to human health posed by toxic chemicals: (1) determine if the chemical is inherently toxic, (2) identify the dose of the chemical that can cause illness, (3) determine the exposure that people are receiving or may receive in the real world, and (4) based on the previous information, estimate the likelihood that adverse health effects will result.

The first two steps require years of research in animal and human populations which is an on-going effort.

Federal and international institutions, such as the U.S. Environmental Protection Agency and the International Agency for Research on Cancer have generated a large body of information about the disease potential of many chemicals offering guidance on what constitutes safe levels for many environmental toxics. When specific guidelines do not exist or when they are inappropriate for use in Maryland, MDE adopts more general guidelines and modifies them to reflect the best science currently available.

Risk assessors at MDE begin involvement during the third step of risk assessment, called "exposure assessment." This step carefully considers the reported contaminants and their levels, the movement and ultimate fate of contaminants in a

particular environmental setting, and human behaviors that might increase or decrease the exposure to chemicals. In practice, the risk assessor develops a scenario, adopting assumptions as needed, and estimates the amount of a chemical that individuals will take in as a result of breathing, eating, drinking, and skin contact. Finally, the risk assessor compares the two pieces of information: the recommended safety level and the real-life exposure. A judgement is then made as to whether or not adverse effects will occur.

Next Month, Mdenvironment will take a look at environmental risk assessment which goes beyond the human health risks and takes into account how MDE calculates risk for the wild things in our state.



Reduction of Lead Risk in Housing: An Update For Our Children

by Alvin Bowles, Jerry Gietka
and Barbara Conrad

The Maryland Department of the Environment is Maryland's primary agency in managing the reduction of the health risk from lead-based paint. The Lead Poisoning Prevention Program is tasked to carry out the mandates established by HB 760, the Reduction of Lead Risk in Housing Act. Its activities involve: a property registration program for rental properties; an accreditation program for training providers, inspectors, and supervisors; the childhood registry for tracking blood lead reports; and enforcement.

The primary cause of childhood lead poisoning is lead paint. The act attempts to reduce the incidence of childhood lead poisoning while maintaining available affordable rental housing. While the statute does not require abatement or removal of lead

paint, it does establish a standard of care intended to both protect the resident from harm and the property owner from liability. The act itself is intended to be preventive. This is a new approach, which will hopefully stop lead poisonings before they happen.

Despite the best efforts of all concerned, some children in Maryland remain lead poisoned. All incidents of elevated blood lead (EBL) must be reported by laboratories to the Lead Poisoning Prevention Childhood Lead registry at MDE. Last year, over 65,000 such reports were received. MDE lead program personnel are working with local health departments to ensure that notices are sent to parents and property owners for any verified blood lead level at or above 15 micrograms per deciliter (uL/DL). Modified risk reduction is required within 30 days of receipt of a notice of EBL at or above 15 uL/DL. The intent is to insure that children receive care and that risk reduction is performed at the residence before the child is damaged irreparably by the lead in their system. Relocation is recommended when the EBL reaches 25 uL/DL. This early response should allow for a reduction in the overall incidence of lead poisoning among children in Maryland.

In 1994 census data shows that the population of children under 6 years of age in Maryland (the

primary risk group along with pregnant women) is at 450,948. Only 59,746 (13%) of that population was screened for lead in the 1996 calendar year. Of those screened, over 8,000 had been exposed.

The law requires an owner of any property built before 1950 containing at least one rental dwelling unit to register that property. The age of the resident is not a factor. This registration must be renewed each before December 31. An owner of a property built after 1949 may also take advantage of the liability protection if he or she elects to by registering that property. There is no requirement that a property built after 1949 be registered. Those properties built before 1950 and those built afterwards who owners elected to register are called "affected properties." Each year, the Department sends notices to owners of registered "affected properties" reminding them of the requirements to renew.

Available census data shows that there were 159,107 units in the state built before 1950. As of 9/30/97, the registry had received registrations covering only 75,458 units in "affected properties."

The law also requires that every property built before 1979 containing a rental unit pay a \$5 per unit fee even if

the property owner elects not to register. No liability protection is afforded to those property owners who do not register their properties. Census data shows that there were 347,299 rental units in Maryland in properties built between 1949 and 1979.

The statute requires that a portion of the fees collected each year be dedicated to community outreach and education. The Coalition to End Childhood Lead Poisoning has been awarded a contract to provide information to both property owners and tenants who need assistance with the Qualified Offer process. The Qualified Offer process is the mechanism established by the law to provide for the relocation and medical care that

may be required. No action may be taken against a property owner in compliance with the law unless they have the opportunity to make a Qualified Offer. The Qualified Offer limits the owner's liability to \$17,000; the total consists of \$9,500 for relocation expenses and \$7,500 for medically necessary expenses. The monies are paid to the provider upon receipt of invoices for the services necessary for location and medical assistance.

Additional information regarding the Lead issue can be found on the MDE home page at <http://www.mde.state.md.us/was/leadhome.html>.



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