



Pollution Prevention News

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EPA Unveils Pollution Prevention Strategy *17 Chemicals Targeted for Reduction in Strategy's Industrial Toxics Project*

EPA's Administrator William K. Reilly has transmitted to Congress the Agency's Pollution Prevention Strategy, developed over the past year in consultation with all Agency program and regional offices. The strategy includes a plan for targeting specific high risk chemicals that offer opportunities for prevention (see box on page 8). EPA is setting a goal of reducing environmental releases of these chemicals by 33 percent by the end of 1992 and at least 50 percent by the end of 1995.

All of the targeted chemicals are included on the Agency's Toxic Release Inventory (TRI); thus, reductions in their releases can be measured in each year's TRI reports.

Several hundred companies who have reported releases of the target chemicals have already been contacted by EPA. EPA is seeking their cooperation in making voluntary commitments to reduce releases and in developing pollution prevention plans to carry out these commitments.

The industrial toxics project was designed in line with one of the stated principles of the strategy, which is to maximize private sector initiative while challenging industry to achieve ambitious prevention goals. At the same time, the strategy emphasizes the need for strong regulatory and enforcement programs under existing statutory authorities.

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Editor's Corner

Moving Forward with Prevention

Stanley L. Laskowski, Director,
Office of Pollution Prevention
U.S. EPA

In 1991 we hope to see pollution prevention gain new ground across the country. EPA's strategy for pollution prevention, discussed in detail above, coupled with the clear legislative mandate embodied in the Pollution Prevention Act of 1990, bode well for the future. The new law and EPA's strategy provide for a well-targeted effort to achieve measurable progress in pollution prevention.

This month we are highlighting the role of the EPA Regional Offices in pollution prevention. A number of exciting initiatives are taking place in the regions. Six of the regions are featured this month (the other four will be featured in our April issue); only

a sample of their many activities could be included here.

Coming from a regional office myself, I am well aware of the excellent contributions of EPA's regional staff. Generally speaking, the Regional Offices are the front-line contacts with the larger environmental community — the states, localities, industry, civic groups, associations, and individual members of the public. EPA depends on the Regional Offices to provide leadership throughout the country. The Regional Offices are the source of many creative ideas and are integrating pollution prevention into their daily activities. We want to call your attention to the EPA regions as another resource — of expertise, energy, and enthusiasm — in developing your pollution prevention projects.

To be added to our mailing
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Resources

Health Effects of CFC Substitutes

Two interim reports released by EPA conclude that a number of CFC substitutes can be used in a manner safe to workers, consumers, and the environment, although more studies are needed to evaluate the full health and environmental effects of the chemicals. Substitutes reviewed in one report include 8 HFCs and HCFCs; the second report examines 8 terpenes and 20 aqueous cleaner chemicals used in metal and electronics cleaning. To obtain copies of the reports, call the TSCA Hotline, 202-554-1404.

National Pesticide Survey Releases Preliminary Results

A three-year national survey of well water conducted by EPA's Office of Water and Office of Pesticide Programs has found that 10 percent of the nation's community drinking water wells and about 4 percent of rural domestic drinking water wells have detectable residues of at least one pesticide. However, less than one percent of the wells have pesticide residues above levels considered protective of human health.

The survey tested 1,347 well water samples, with some samples taken in every state. Samples were tested for 126 pesticides and breakdown products, as well as for nitrates. The survey found that more than half of the nation's wells contain nitrates. About 1.2 percent of community wells and 2.4 percent of rural wells showed detections above the 10 parts per million maximum contaminant level established to protect human health. High levels of nitrates in ground water can often be traced to excessive rates of fertilizer application or improper management of animal wastes or septic systems.

The most frequently detected pesticide was dacthal, a broadleaf weed killer used primarily on lawns and approved for use on a variety of fruit and veg-

etable crops. Dacthal was nearly always found at about 0.1 percent of the level of health concern. The next most frequently detected pesticides, in order, were: atrazine, DBCP, prometon, simazine, EDB, and gamma lindane.

Commenting on the survey results, Henry Habicht, EPA's Deputy Administrator noted: "The findings of the survey indicate that the vast majority of drinking water wells in this country do not have levels of pesticides or nitrates that would pose a risk to public health." For more information on the survey results, contact Al Heier, 202-382-4355.

Taming the Threat in the Northwest

A new report outlines how the Northwest U.S. can become a leader in source reduction, with the goal of preserving the region from environmental degradation. *Taming the Toxic Threat: Strategies to Reduce Hazardous Waste Generation in the Northwest* presents issues and steps to take, as well as a resource guide, in a format accessible to policymakers, businesses and citizen groups. The report proposes variations on the region's existing technical and business assistance programs that could encourage companies to reduce their toxic waste output. *Taming the Toxic Threat* was prepared by the Northwest Policy Center of the University of Washington's Graduate School of Public Affairs. To order, contact the center at (206) 543-7900.

Recycling Laws Sweep the States

A study by the National Solid Wastes Management Association counted 65 recycling laws enacted in 27 states during the first five months of 1990. Thirty states and the District of Columbia have comprehensive laws which require detailed recycling plans and/or separation of recyclables and contain one or more other provisions to stimulate recycling. Many of the states have set recycling goals that exceed EPA's

25% target rate for recycling by 1992, although to date only a handful of states (New Jersey, Oregon, Rhode Island, Washington) appear to be achieving recycling rates in the 20 percent or higher range.

The report notes a number of trends in recycling legislation. For example, fewer states are including materials separation requirements in their legislation; more often they are requiring their municipalities to produce detailed recycling plans and imposing disposal bans for selected wastes. At least five states now include businesses in their recycling laws, and more are expected to add commercial solid waste recycling.

States also are beginning to focus on market development. Some states are revising their procurement laws to include price preferences and purchase goals for recycled products and are requiring manufacturers to use secondary materials. Thirty-five states provide some type of grant or loan, usually to municipalities, for recycling. A growing number of states are using tax incentives as well. For example, in New Jersey, businesses may take a 50 percent investment credit for recycling vehicles and machinery. They are also eligible for a 6% sales tax exemption on purchases of recycling equipment.

For more information, contact Leslie Legg at NSWMA, 202-659-4613.

EPA Establishes New Office

EPA has established a new Office of Environmental Education as authorized by the recently enacted National Environmental Education Act. The office aims to increase environmental literacy and awareness among students and educators. Responsibilities will include coordination of programs and information in government, private industry and education; supporting environmental education projects; and carrying out programs such as the President's Environmental Youth Awards and Environmental Youth Forums. For more information, contact Mike Baker, 202-382-4965.

EPA Regional Offices

Region 3: Pollution Prevention in RCRA Consent Orders

As part of the RCRA corrective action enforcement process in Region 3, EPA is seeking to include, in each corrective action

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*Delaware, Maryland,
Pennsylvania, Virginia,
West Virginia, D.C.*

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consent order, a requirement that the owner/operator develop a waste minimization plan, based on a guidance document prepared by the region. The plan must describe procedures to reduce the quantity and toxicity of the hazardous waste generated at the facility.

Region 3 is also concerned about potential risk associated with releases, particularly air emissions, from facilities identified in the Toxic Release Inventory which offer good opportunities for pollution prevention. Prior to beginning negotiations on a RCRA corrective action order, the TRI data for the facility are reviewed by a regional toxicologist. Negotiations include requirements to reduce significant releases through pollution prevention. To date, in several cases, such negotiations have led companies to agree to reduce significant emissions down to zero through preventive measures.

BMY

This facility is located in York, Pennsylvania and manufactures tracked military vehicles. During negotiation of a final RCRA 3008(a) order, the TRI data for the facility was reviewed. The data revealed a potential risk-related problem associated with the discharge of hex chromium into a receiving stream and the release of chlorinated solvents from degreasing operations as stack emissions. The company decided to install a forced crystallization treatment process, i.e., evaporation, that could handle all the waste streams from the plant in a closed loop. As a result, the discharge of hex chromium into the receiving stream would be eliminated. The company also added a cooling unit to the degreaser to condense the organic vapors and have them settle back into the tank rather than going out the stack. The cooling unit resulted in close to a 90 percent reduction in chlorinated solvents being released. This technology is readily available but not commonly used.

Ahead in '91...

- A national conference on environmental consumerism, to be hosted by Region 3 in the Fall of 1991 in Philadelphia.
- An energy conservation working group will be convened with representatives from electric utilities and Region 3's Pollution Prevention Program, to explore cooperative efforts on "negawatts" and conservation programs.

Region 8: The Environmental Scholars Program

Region 8's experiment in pollution prevention education is paying large dividends in Colorado, and other states in the Region are now interested in starting similar programs. Using a "teach the teachers" concept, the Environmental Scholars program brought in K-12 teachers (science and other fields) for a two week, intensive workshop at Metro State College that included guest speakers from EPA, the State of Colorado, industry and academia.

The material challenged the teachers to look at environmental problems and solutions from a fresh perspective, and provided inspiration as well as an opportunity to network with fellow teachers. The program also included a support structure for continued environmental education by providing technical assistance (including quarterly in-service training) and informal "mentoring" between EPA experts and teachers.

Another integral aspect of the program is the implementation of pollution prevention projects by the teachers in their home schools, in partnership with their communities.

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*Colorado, Montana, North
Dakota, South Dakota, Utah,
Wyoming*

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Project EcoSchool

Columbine Middle School is well on the way to becoming Montrose's first "ecologically sound" school.

The effort is called "Project EcoSchool" and has my 27 students eagerly combing the school and its grounds for virtually anything that can be recycled.... As a reward for all these efforts we'll be taking trips to the city landfill and Montrose Recycling Center!

The program has been a real eye-opener for the kids. Many have reported back that they've talked to their parents about recycling and now are recycling numerous items from their households.

"I can make a difference... now I know where everything goes and that it doesn't just go away," reports Trent Paradis.

We will be documenting just how much we recycle so at the end of the year we'll be able to compute in graphic terms just what kind of an impact we've had.

— Roxanne Brickell, Sixth-Grade Teacher,
Columbine Middle School, Montrose, CO



EPA Regional Offices

Region 1: Drawing Cross-Media Connections in New England

Region 1's Pollution Prevention efforts have experienced continual growth since January, 1989. The following examples highlight pollution prevention efforts within EPA programs, across media programs, and in the New England community.

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*Connecticut, Massachusetts,
Maine, New Hampshire, Rhode
Island, Vermont*

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Prevention Task Force, made up of representatives of every Division and Office in the Region.

The central activity of the Task Force is the development and implementation of the Region1 Pollution Prevention Strategy, an explicit statement of all the pollution prevention activities that the Region will undertake in the coming year. The strategy will gradually be built into the Regional accountability process. The FY 91 Strategy represents Region 1's second annual effort to outline its plans for integrating pollution prevention into all Region1 programs.

Ozone Layer Protection Conference

More than 400 individuals from the electronics and metal cleaning industries attended this conference for solvent users on October 31 and November 1 in Natick, MA. Regional Administrator Julie Belaga emphasized the opportunities for pollution prevention in process change and chemical alternatives. The technology transfer conference enabled local industries to take advantage of international, national and local expertise and knowledge.

A total of 38 equipment representatives exhibited their products at the conference. Site visits to selected Boston area electronics and metal working facilities illustrated alternative, non-ozone depleting processes. A videotape of the conference and a "How To" report will be available shortly.

Task Force Strategy Institutionalization

The primary group charged with integrating pollution prevention into Region1's programs is the Region I Pollution

New England Pollution Prevention Council

The New England Pollution Prevention Council (NEPPC), co-chaired by Regional Administrator Julie Belaga and John Gould, Executive Director of Associated Industries of Massachusetts, serves as a forum for New England's pollution prevention issues. During its first year, the Council focused on two projects:

- **Transportation Policy Proposal** — The Council is working to develop policy principles that will look at environmental considerations in the planning phase of transportation projects.
- **Automobile Pollution Prevention Project Catalog** — The Council is developing a catalog of projects that will prevent pollution associated with automobile use and maintenance. The Council is planning to seek corporate sponsorship of these projects.

Region 9: Promoting Training for Federal, State, and Local Agency Staff

Region 9's Pollution Prevention Program has recently expanded with the addition of a multimedia workgroup composed of staff and managers from each of the region's divisions. A Senior Management Steering Committee and the workgroup are responsible for promoting the development and institutionalization of pollution prevention within our programs and throughout our region.

Several successful training sessions and conferences have taken place in the last few months under the auspices of Region 9. Waste Minimization Assessment Training held in

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*Arizona, California, Hawaii,
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Trust Territory of the Pacific
Islands, Commonwealth of
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September in the Bay Area attracted staff from EPA, state, and local agencies. As a follow-up, conference attendees will be performing at least three on-site waste minimization assessments.

In October, a conference of California Local Government Waste Minimization Programs was held in Sonoma in conjunction with the California Department of Health Services and several California Local Government Waste Minimization Committees. (See the October 1990 issue of Pollution Prevention News for a write-up of these activities.)

In November, a Region 9 States RCRA Hazardous Waste Minimization Conference was held at Lake Tahoe, attended by representatives of EPA, Arizona, California, Guam, Hawaii, and Nevada. In addition to speakers from state and local programs, the conference included discussion of ways of integrating pollution prevention into program activities, and improving coordination and communication within the states and in the region as a whole.

EPA Regional Offices

Region 2: New Way of Doing Business

Region 2 has made significant progress in making pollution prevention the "new way of doing business" in all facets of operations. Traditional regulatory mechanisms are being adapted to incorporate pollution prevention and new non-regulatory projects are being initiated. Two projects below illustrate both methods of making prevention work.

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New Jersey, New York, Puerto Rico, Virgin Islands

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Facility Assessments

The Air Toxics Pollution Prevention Initiative started with the recognition that many toxic pollutants do not fall under the regulatory ambit. Using the SARA 313 and ATERIS databases, a list of 30 targeted chemicals, and the number of complaints and locations of the facilities as criteria, Region 2 selected 19 facilities and invited them to participate voluntarily in the initiative. Five facilities were selected for detailed contractor assessments; preliminary results are encouraging. For example:

- Five companies have corporate policies and goals in place to reduce emissions by 1995; and
- Two facilities (Alcan and Amerada Hess) achieved 60% or greater emissions reductions by implementing pollution prevention techniques and better maintenance and monitoring.

Successful results will be publicized; a final report on all the facilities should be ready this summer. In late FY91, this effort will be expanded further to include more facilities in other regional hot spots.

Waste Reduction Statements for New RCRA Permits

The Air and Waste Management Division in Region 2 is requesting that all TSD facilities applying for new RCRA permits develop a Waste Reduction Impact Statement within six months of permit issuance. The statement must include the following information:

- an identification of the annual amount and types of wastes;
- for each waste stream, an identification of the source of the generation of these hazardous wastes;
- an analysis of technically and economically feasible hazardous waste reduction techniques that were implemented since 1984; and
- a program and schedule for implementing the feasible hazardous waste reduction techniques.

Region 5: Creating Markets for Recycled Products

Recognizing the growing glut of old newspaper (ONP), the inadequate market for post-consumer waste paper, and the resulting potential to stifle what has been a successful recycling effort on the part of the public, staff from EPA Region 5's Solid Waste Section began efforts in early 1990 to interest the Midwest pulp and paper industry in a joint project to create greater markets for these products. The result of those efforts was the creation of the Great Lakes Waste Paper Work Group, a public-private initiative directed toward consumer waste paper reuse.

Representatives from Region 5 and the Illinois Department of Energy and Natural Resources presented the idea to a large group of top managers from the industry at a pulp and paper conference in May 1990. Seven companies agreed to form the work group: Green Bay Packaging; Perry H. Koplik & Sons; Sears, Roebuck & Company; R.R. Donnelley & Sons; Packaging Corporation of America; Mead Central Research; and the American Paper Institute.

Meeting in Chicago for the first time in August 1990, the group agreed to focus its efforts on increasing ONP and lower paper grade reuse; improving public education on waste paper needs; preparing waste paper quality guidelines; and encouraging organizations to buy products made from post-consumer waste paper.

Plans are underway to initiate a similar project with representatives of the plastics industry. For further information on both projects, contact Jay Bergamini at EPA, 312-353-7598.

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Handbook on Office Recycling

The Office Recycling Handbook provides step-by-step instructions for managers on how to establish an office recycling program. A joint project of EPA Region 5 and the Region 5 Office of the U.S. General Services Administration, the handbook also contains eight appendices that cover a variety of topics, from a description of commonly recycled products and contaminants in the recycling stream, to sample memos that can be used to kick off a recycling program. With the first run of copies widely distributed, EPA is republishing the handbook. For information or to order copies, contact Jay Bergamini, 312-353-7598 or Al Fenedick, 312-353-6872.

In the States

Louisiana Addresses Pipe Scale Problem

The fundamental concept of pollution prevention is broad and can be applied to extractive industries such as oil drilling or mining that can generate substantial quantities of harmful materials. This is precisely the situation in Louisiana where radioactive oil drilling waste currently poses a significant problem. In response, the State of Louisiana has taken a proactive approach by developing and implementing the first regulations in the nation to specifically address the problem of naturally occurring low level radiation emanating from oil drilling.

During oil drilling operations in Louisiana, radium rich water deposits a scale on the inside of drilling pipe and equipment. Eventually scale builds up to the point where it must be removed, or the equipment discarded. By this time, the concentration of radium in the scale is extremely high and the scale poses a significant health risk.

Removal of the scale can result in high occupational exposures as well as localized radium contamination to soil and water. Simply discarding the pipe and equipment results in risks to the general public. The exposure from either removal or disposal can be orders of magnitude above what EPA considers acceptable.

Last year, local press in both Louisiana and Mississippi focused upon the risks posed by contaminated playground equipment built from discarded contaminated pipe. Readings as high as 200 times background level were recorded in railings, baseball field fixtures, and playground equipment. This is equivalent to levels present in a nuclear power reactor, an exposure the same as that received by 'radiation workers'.

Regulation of naturally occurring radioactive material (NORM), such as pipe scale, has long been a problem throughout the United States. Presently, there are no federal regulations, and model state regulations have been under review for several years. Given the importance and pervasiveness of the problem, Louisiana moved forward on its

own to propose an interim policy which regulates the handling, storage and disposal of scale or soil contaminated with scale. Included in the policy are worker protection guidelines, waste storage controls, and a prohibition of transfer of contaminated equipment. Under the final regulations adopted in September 1989, firms handling used and potentially contaminated drilling pipe are required to complete a radiological survey to determine if they fall under the regulations. The regulations also prohibit release of contaminated sites and equipment for unrestricted use and require that decontamination and maintenance of equipment be performed only by authorized personnel. A fee system established



by the regulations helps support state compliance oversight.

As a result of the regulations, a new and environmentally sensitive pipe cleaning industry is developing within Louisiana. Firms are now licensed by the state ensuring that proper environmental compliance measures are employed.

Since this is a widespread problem which includes oil drilling operations in adjacent states, the long range solution is development of a state/EPA/industry partnership. The industry also has a stake in the effort. Developing a process which actually inhibits the formation of the scale is the ultimate answer. Until that ultimate remedy is in place, the Louisiana regulations remain an excellent model for other states.

For more information, contact Hall Bohlinger, Louisiana Department of Environmental Quality, 504-925-4518 or Dennis O'Connor at 202-475-9600.

— Dennis O'Connor
U.S. EPA Office of
Radiation Programs

Solvents: The Good, the Bad, and the Banned

A 6-hour national teleconference on alternative technologies will be held March 13, 1991, sponsored by the University of Tennessee Center for Industrial Services and the Tennessee Dept. of Health and Environment. For information, call Pamela Peters, 615-242-4816.

Alabama Gives Free Advice on Waste Reduction

Companies in Alabama now can get free on-site assessments of waste reduction opportunities under a new public/private partnership called WRATT, the Waste Reduction And Technology Transfer program. The assessments are conducted by a corps of specially trained retired engineers and scientists who reviewed the practices of 25 companies last year and are expected to work with 60 more in 1991.

Businesses warm to the program because it is independent of the regulators and its recommendations are not binding. But companies apparently are impressed by evidence that WRATT can cut their disposal costs, reduce their potential liability and improve their image. The program is a non-profit partnership of the Alabama Department of Environmental Management, a non-profit group called Shoals, Inc. that promotes Alabama's economy, and the Tennessee Valley Authority, using an EPA grant. As a non-profit, WRATT is eligible for charitable contributions from industry, which so far make up nearly half of its funding.

Part of WRATT's mission is to assist other states developing similar programs, and it has already done so for Iowa, South Carolina and Mississippi. The WRATT program is modeled on a publicly funded Tennessee program run by the University of Tennessee's Center for Industrial Services. For more information, contact WRATT at 205-764-5179 or 205-386-2807.

Test Your Pollution Prevention IQ!

How much pollution prevention info do you have at your fingertips?
Test your knowledge base by taking this quiz.

1. The furnace/air conditioner uses more energy than anything else in the home. What is the second greatest source of home energy use?

- (a) Home appliances
- (b) Indoor and outdoor lighting
- (c) Hot water heater

2. What accounts for more than half of the hazardous waste disposed of by individuals?

- (a) Paint products
- (b) Cosmetic products
- (c) Household cleaners

3. The proportion of Americans who get to work using public transportation has changed how much since 1960?

- (a) Increased more than 50%
- (b) Increased, but less than 50%
- (c) Dropped more than 50%
- (d) Dropped, but less than 50%

4. Some 220 million acres of land in the U.S. have been deforested for livestock production. What proportion of U.S. croplands are used just to grow feed for livestock?

- (a) 15%
- (b) 25%
- (c) 50%
- (d) 75%

5. In the average U.S. household, what proportion of the water is used in the bathroom?

- (a) 20%
- (b) 35%
- (c) 50%
- (d) 75%

6. Aerosol cans that say "No CFCs" are environmentally safe. True or False?

7. The best time to water your lawn is

- (a) Morning
- (b) Afternoon
- (c) Early evening
- (d) Night

8. The bleaching of paper for paper towels, coffee filters, etc. has been linked with what toxic substance?

- (a) Dioxin
- (b) Chlorofluorocarbons
- (c) Lead
- (d) Sulfuric acid

9. How many trees are used in making disposable diapers every year?

- (a) 10 million
- (b) 100 million
- (c) 1 billion
- (d) 3 billion

10. What is the primary source of significant exposure to lead in the environment?

- (a) deteriorating lead-based paint in housing
- (b) urban soil and dust contaminated by lead from paint and gasoline
- (c) drinking water contaminated by lead solder joining water pipes, past use of lead service lines, and continued use of lead in brass plumbing fixtures
- (d) emissions from lead smelters and municipal waste combustors

11. The largest single source of CFC emissions is:

- (a) Disposable foam products
- (b) Leaking auto air conditioners
- (c) Refrigerators

12. How many pounds of carbon does the average car release each year?

- (a) 100
- (b) 1,000
- (c) 5,000
- (d) 10,000



13. Overall, you use less energy if you keep your home at a constant temperature; so don't turn down the heat when you leave for a few hours. True or False?

14. Before they had pesticides, farmers lost about one-third (33%) of their crops to pests. Today, with pesticides, what percentage of U.S. crops do pests ruin?

- (a) 5%
- (b) 12%
- (c) 20%
- (d) 33%

15. Waste paper, food scraps, yard waste, and paper plates together make up what proportion of the material in U.S. landfills?

- (a) 71%
- (b) 46%
- (c) 23%
- (d) 10%

16. You save gas when you let your car idle for a couple of minutes rather than turning the ignition off and on again. True or False?

17. Compact fluorescent bulbs cost a lot, but they can save you money because they last much longer than incandescents and use only _____ as much energy.

- (a) 10%
- (b) 25%
- (c) 50%
- (d) 75%

18. About 70% of plants identified by the National Cancer Institute as being useful in cancer treatment are found only in rainforests. Nevertheless, destruction of the world's tropical rain forest is proceeding at the rate of

- (a) 1 acre per minute
- (b) 10 acres per minute
- (c) 20-30 acres per minute
- (d) 50-100 acres per minute

19. Which of the following gases is (are) responsible for the greenhouse effect and global warming?

- (a) carbon dioxide
- (b) chlorofluorocarbons
- (c) methane
- (d) nitrous oxide
- (e) sulfur dioxide
- (f) ozone

20. According to EPA's Toxic Release Inventory, which state showed the largest reported releases of toxic chemicals into the environment in 1988?

- (a) Louisiana
- (b) Ohio
- (c) Texas
- (d) Florida
- (e) Tennessee

Answers:

1: a. 2: c. 3: c. 4: c. 5: d. 6: False. Most such aerosols use propane or butane which contribute to smog. Use products with non-aerosol vacuum pumps instead. 7: a. In the heat of the day, water evaporates 4 to 8 times more quickly than early morning; watering at night can cause fungus. 8: a. 9: c. 10: a. The next largest sources are b and c. 11: b. 12: d. 13: False. 14: d. 15: b. 16: False. If your car is standing still for one minute or longer, idling is less efficient than restarting the car. 17: b. The bulbs are usually worth the investment if they are on at least 2 hours a day. 18: d. At this rate, tropical rain forests will be completely destroyed in 100 years. 19: all except e. 20: a.

— Judith K. Rosenthal. Sources include: 50 Simple Things You Can Do to Save the Earth, Save Our Planet, and publications by EPA and the World Resources Institute.

EPA Strategy Challenges the Private Sector

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In incorporating pollution prevention into the Agency's existing programs, the strategy favors flexible, cost-effective regulatory approaches that involve market-based incentives where practical. For example, the strategy calls for a flexible use of the Toxic Substance Control Act (TSCA) to provide a cost-effective means to create direct or indirect incentives for multi-media prevention strategies. Another mechanism is the use of "regulatory clusters," through which EPA will categorize the rules it intends to propose over the next several years for certain chemicals and their sources. The clusters are intended to foster improved cross-media evaluation of the cumulative impact of standards, more certainty for industry, and early investment in prevention activities.

The strategy outlines the various institutional barriers within the Agency's own organization that limit its ability to develop effective prevention strategies, and spells out several short term measures to address these barriers, including designating special assistants for pollution prevention in each Assistant Administrator's office, developing incentives and awards to encourage Agency staff to engage in pollution prevention efforts, incorporating prevention into the comprehensive 4-year strategic plans by each program office, and providing pollution preven-

tion training to Agency staff.

The 17 pollutants identified as targets of the industrial toxics project present both significant risks to human health and the environment and opportunities to reduce such risks through prevention. The list was drawn from recommendations submitted by program offices, taking into account such criteria as health and ecological risk, potential for multiple exposures or cross-media contamination, technical or economic opportunities for prevention, and limitations of treatment.

In light of the substantial public commitments already undertaken by many companies to reduce the release of TRI chemicals, EPA expects a positive response to its call for voluntary reductions.

The strategy notes that opportunities for prevention can be practically applied in virtually all sectors, including manufacturing, farming, energy consumption and transportation, and the disposal of municipal solid waste. The industrial toxics project for the manufacturing sector represents the first focus of a comprehensive Agency strategy. EPA will be seeking to work with the Departments of Agriculture, Energy, and Transportation to develop strategies for preventing pollution from agricultural practices and energy and transportation use. In a separate effort, EPA has begun

Target Chemicals

(million pounds released in 1988)

Benzene	33.1
Cadmium	2.0
Carbon Tetrachloride	5.0
Chloroform	26.9
Chromium	56.9
Cyanide	13.8
Dichloromethane	153.4
Lead	58.7
Mercury	0.3
Methyl Ethyl Ketone	159.1
Methyl Isobutyl Ketone	43.7
Nickel	19.4
Tetrachloroethylene	37.5
Toluene	344.6
1,1,1-Trichloroethane	190.5
Trichloroethylene	55.4
Xylene	201.6

to address prevention opportunities for the municipal sector. EPA hopes to conclude the strategy process with a series of public hearings in the fall of 1991. Copies of the strategy document are available from Julie Shannon in the Office of Pollution Prevention, 202-382-2736.

United States Environmental
Protection Agency (PM-219)
Washington, DC 20460

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