

WASTEMATTERS

The Energy and Waste Management Bureau — Iowa Department of Natural Resources January 2004

National Recognition for Pollution Prevention Intern Program

Governor Vilsack Helps Honor Students, Companies

The Iowa Pollution Prevention Intern Program, coordinated by the Iowa Department of Natural Resources, has been tapped by two national organizations to receive top honors for leadership and innovation in protecting the environment.

In a November press conference, Governor Tom Vilsack applauded the program's recent recognition.

"Everyone wins with this program," said Governor Vilsack at the Lear Corporation, Iowa City. "The companies save money, the students gain practical experience, the college and universities demonstrate the knowledge and skills they're passing on in the classroom and all Iowans get cleaner air and water."

On October 25, the Council of State Governments honored the intern program as a recipient of the Midwest Region's Innovations Award, and as one of eight national finalists at a ceremony in Pittsburgh. The awards are the only comprehensive, national program to focus exclusively on state programs and policies. Winners are selected from hundreds of applicants for creativeness, results, and impacts on the region.

The intern program also received the Most Valuable Pollution Prevention Award from the National Pollution Prevention Roundtable. The non-profit organization is the largest membership



University of Iowa student Ori Sivan, a 2002 Pollution Prevention Intern at General Electric, speaks with Governor Tom Vilsack before a press conference announcing the program's recent awards.

organization in the United States devoted exclusively to pollution prevention. The DNR received its award at a ceremony Sept. 17 in Washington, D.C.

Started in 2001, the Iowa Pollution Prevention Intern Program is a unique partnership among government, academia and business. By matching college students with Iowa companies, the program offers interns hands-on experience reducing pollution in industrial settings. The DNR oversees the program and provides training and technical support. Companies receive specific options for preventing pollution and saving money. Just as importantly,

the program helps keep qualified college graduates in Iowa.

Through the work of the interns, companies have saved more than \$10 million, with an annual average of \$98,000 per company. The program also has conserved 680 million gallons of water, decreased energy use by 15 million kWh, reduced solid waste by 20,000 tons, decreased hazardous waste by 57,000 gallons and reduced air emissions by 227 tons.

For more information on the DNR's Pollution Prevention Intern Program, contact Program Coordinator Jan Loyson at (515) 281-3142, or Jeff Fiagle at (515) 281-5353.

Landfill Liner Standards

Protect Iowa Groundwater

SUBTITLE D STANDARDS:

Composite landfill liner requirements:

- Minimum 30-mil FML
- Minimum two-foot layer of compacted soil
- FML in direct, uniform contact with compacted soil component
- If FML is made of high-density polyethylene, it must be at least 60-mil thick

Alternative liner system requirements:

- System must be approved by state
- Certain concentration values must not be exceeded in nearby aquifers



Subtitle D landfill liners are helping Iowa solid waste agencies take further steps to protect the state's groundwater. The federally required Resource Conservation and Recovery Act (RCRA) Subtitle D liners collect more leachate and help prevent pollution.

As a Subtitle D-approved state, Iowa must have enforceable standards that meet minimum national criteria — rules that protect human health and the environment. This means requiring landfill liners that meet federal Subtitle D standards.

A PROVEN TECHNOLOGY

According to Jeff Myrom, DNR executive officer, the new liners provide landfills with the most practical protection for Iowa's groundwater.

"The Groundwater Protection Act sets the policy of maximum protection for Iowa groundwater, and we know Subtitle D liners are effective for that purpose," Myrom said.

Subtitle D standards call for a composite landfill liner with a leachate collection system or an alternative liner system.

The composite liner consists of two components — a minimum 30-mil flexible membrane liner (FML) and a minimum two-foot layer of compacted soil. The FML must be installed in direct and uniform contact with the compacted soil component. If the FML is constructed of high-density polyethylene (HDPE), it must be at least 60-mil thick.

The alternative liner system must be approved by the state and

ensure that certain concentration values will not be exceeded in nearby aquifers.

Currently, some landfills may either have no liner at all; a system that captures some but not all leachate; or a liner that was installed before federal guidelines were established. According to Myrom, Subtitle D liners offer several more engineering steps to ensure the collection of leachate is maximized.

"Many other states have made the transition to Subtitle D liners and found that very few have groundwater problems," Myrom said. "The liners are a proven technology that will work well now and in the future. The liners will also allow for greater flexibility to integrate emerging technology."

PLANNING FOR THE FUTURE

All landfills should begin considering new liners as soon as possible, but the DNR is considering a transition period of 10 years at the maximum.

Because the transition time has not been officially set, and it may be less than 10 years, it is important to begin planning for the future now.

"Landfills need to start planning and considering what's best for them. The sooner people start planning, the better," Myrom said.

Landfills have a number of options when considering new Subtitle D liners. They could install the liner and continue

"The Groundwater Protection Act sets the policy of maximum protection for Iowa groundwater, and we know Subtitle D liners are effective for that purpose."

— Jeff Myrom, Iowa DNR

landfilling, close the landfill, discuss consolidating with other landfills to create a regional landfill, or build a transfer station, among other options. Permits and budgeting also need to be taken into account when planning.

Rulemaking, which will determine the amount of transition time, will begin in 2004 and rules will likely become effective in 2005, Myrom said.

"This is the first time since 1997 that we're going back to municipal solid waste landfill rules and making substantive changes," Myrom said. "It's a good opportunity to clarify any issues to mirror federal rules."

REACTIONS FROM IOWA LANDFILLS

When the Carroll County Solid Waste Management Commission decided to expand its landfill, the Commission installed a Subtitle D liner in November 2002.

"We could have chosen to go with compacted clay, but we compared it with the benefits of a liner and decided to go with the liner," said Mary Wittry, director. "We knew then that we were meeting the federal law requirements."

Other landfills, like Bremer County, are thinking about the future but waiting for more details before making a decision.

"We've thought about it. You

have to,” said Brett Vette, Bremer County landfill manager. “The landfill’s looked at expanding or becoming a transfer station, but we haven’t looked at anything in-depth yet.”

The landfill has another 29 years left and wants to avoid closing because of new regulations. Vette plans on attending hearings and open discussions on the rulemaking to address the issue.

Floyd Pelkey, operations manager at Bluestem Solid Waste Agency in Cedar Rapids, also has questions about costs associated with the liners and further testing of the liners’ effectiveness.

However, he plans on continuing to expand the landfill and to use the new liner.

“We have always looked at liners and compared them with the cost of compacted clay. If we have to use a liner, we will,” Pelkey said. “For larger landfills, it’s just part of business. If that’s regulation, we’ll follow.”

The Rathbun Area Solid Waste Commission began planning for the new regulation about three months ago, crunching numbers and scouting sites, according to Chairman Ralph Alshouse.

Rathbun is considering installing the liner — the landfill has another five years left on the current site — or becoming a transfer station.

“We’re in the process of looking to see which way to go,” Alshouse said. “We’re looking for the most economical way to serve the best interest of our people.”

For more information about landfill rule revisions, contact Jeff Myrom at (515) 281-3302; e-mail: Jeff.Myrom@dnr.state.ia.us. For the draft landfill guidance document, visit the DNR Web site at www.iowadnr.com. Click on “Waste Management” and then on “MSW Landfill Expansion and Liner Guidance Draft” under Hot News.



Metro Waste Authority Wins Award for Subtitle D Cap and Liner

Installing a Subtitle D landfill liner system helped Metro Waste Authority (MWA) in Des Moines reduce air emissions and leachate generation, save money and even win an award.

In 1999, MWA installed methane extraction wells and a geo-synthetic liner as part of a landfill capping system in the 47-acre North Closure area of the Metro Park East Landfill. MWA also hired a landscape architect to build planting mounds designed to match the landfill cap with the surrounding landscape.

By reducing leachate generation, the capping system will save MWA about \$2.5 million over the next 30 years — money that would normally be spent to truck leachate out for treatment. More efficient methane extraction and reduced air emissions also are benefits of the liner. The work on the North Closure project earned MWA the 2002 Solid Waste Association’s Landfill Management Excellence Award.

“As an organization, we’ve always tried to go above and beyond environmental regulations,” said Sarah Rasmussen, public affairs manager for MWA. “We wanted to try the liner system to see if it would have an effect on the leachate and methane generation.”

Since the installation of the liner system in the north closure area, generation of methane gas has noticeably decreased because of the reduced amount of moisture in the waste mass, Rasmussen said.

“We’ve been able to be much more efficient in collection of methane gas that is produced in that area,” she said.

A geo-synthetic liner was also placed in the Phase 1B area of the Metro Park East Landfill in the summer of 2003. The area is located over an old cell that only has a clay layer.

Construction is completed on the cell, and it will be the next area where MWA will landfill waste, once the ground freezes.

“We’re improving environmental controls in that area with the liner,” Rasmussen said.

The layers of the capping projects include:

- ◆ 8 inches of densely compacted clay soil (impermeable sub-base layer)
- ◆ 40 mil-thick HDPE plastic liner (impermeable layer)
- ◆ HDPE plastic drainage layer
- ◆ 18 inches of soil, including two inches of compost
- ◆ Grass seed



Workers install the new Subtitle D liner in the Phase 1B area of the Metro Park East landfill.

WHY NEW LINERS?

- Collects more leachate
- Protects groundwater from pollutants
- Meets federal RCRA Subtitle D requirements
- Protects human health
- Provides greater flexibility to integrate emerging technologies



Sigourney Sorts Out Its Cleanup Days

Residents Recycle “White Goods” and “E-Goods”

CLEANUP RESULTS:

Within a three-year period, Sigourney saved almost \$7,000 and diverted 48 tons of waste from the landfill.

A LOT OF LEAD:

An average computer monitor contains four to six pounds of lead and other heavy metals that should be kept out of landfills.



Residents across Iowa have come to expect annual, no-cost “spring cleanup days,” when large, bulky items may be left at the curb and are hauled away – often to the landfill. Yet, high costs and stretched budgets have prompted many local governments to discontinue this service.

The City of Sigourney (pop. 2,209) has developed a unique spring cleanup program that is convenient and inexpensive for its residents, diverts significant amounts of waste from the landfill, and has saved the city thousands of dollars in the three years it has operated.

After several years of one-day events, when mixed items were left on the curb, loaded, and hauled to the landfill by the city, Sigourney decided it was time to make a change.

“We were pretty overwhelmed at the amount of stuff put out and our landfill cost alone was \$1,200 [per event], not to mention vehicle operation and labor,” said Jim Dickinson, director of public works for the City of Sigourney. “We wanted to keep the service, but if we had stayed with the old system, we would have had to raise sanitation rates.”

DIVISION OF MATERIALS MULTIPLIES THE SAVINGS

The change began in 2001, when the city implemented a week-long event, designating separate days for residents to set out metal, wood, and appliances (white goods). A “landfill day” at the end of the week took items that didn’t fit these categories. In 2003, the program expanded to include a day for electronic goods (e-goods).

With the exception of a \$10 fee per appliance (white goods), all items were picked up at no charge

to the residents and were delivered to local composting and recycling facilities. To stimulate residents’ interest, Sigourney borrowed the DNR’s educational, interactive recycling trailer for a day.

“We’ve seen a dramatic decrease in materials landfilled, and it has progressively gotten better each year,” Dickinson said.

He estimates that 48 tons of waste were diverted from the landfill in the three-year period, and the city saved almost \$7,000.

Dickinson attributes much of the savings to hauling arrangements made with materials dealers. For example, on “metals day,” a local salvage yard provided a trailer and hauling while the city provided manpower. “That in itself was a huge savings,” he said.

On “e-goods day,” Computer Recycling, of Marshalltown, provided a trailer and hauled all the goods to its facility for a nominal fee.

“The pure volume of e-goods really amazed me,” Dickinson said. We stacked the 20-foot trailer about four feet high. It was a real success.”

A NEW PURPOSE FOR OLD ELECTRONICS

Ken Halstead, director of Computer Recycling, agreed. The non-profit company refurbishes computers, then donates them to low-income homes, churches,



Creating separate Spring Cleanup Days for metal, wood, appliances and electronics (above) saved the City of Sigourney money and landfill space.

schools and other places in need.

“The big thing is that these computers are still being used, for the betterment of the community,” Halstead said, noting that some of Sigourney’s items were donated to low-income college students who couldn’t otherwise afford them.

Benefits multiply when environmental concerns are considered. Theresa Stiner, environmental specialist with DNR’s Energy and Waste Management Bureau, estimates that an average computer monitor contains four to six pounds of lead and other heavy metals that should be kept out of landfills.

For other communities contemplating spring cleanup changes, Dickinson offered this advice: “I can definitely see this spinning off to other communities. But we learned that you need to have a lot of public education, way up front, because you’re asking people to do something they’re not used to. Every year, we do more with the media and people have really responded.”

For information on Sigourney’s recycling program, contact Jim Dickinson at (641) 622-3080.

Strategy Report Provides Recommendations for Electronics Recycling

With input from a 19-member advisory committee, the DNR has created a strategy report to guide state policy and procedures related to Iowa's electronic waste.

Electronics make up one of the fastest growing waste streams in Iowa and the nation. According to a study completed for the DNR in 2002, Iowans generated 274,000 obsolete personal computers in 2001. By 2005, that number is expected to double.

Electronics waste is of particular concern due to the potentially hazardous materials in their composition that could affect water quality and public health if not properly managed.

REPORT RECOMMENDATIONS

An advisory committee consisting of electronics recyclers, the Iowa Society of Solid Waste Operations, the Iowa Recycling Association and government officials, identified the following priorities:

1. EVALUATION OF A LANDFILL BAN:

Systematically evaluate the need for, feasibility, and impacts of a landfill ban, along with alternative methods of diverting the material from disposal.

2. FUNDING AND MONETARY INCENTIVES:

Develop financial resources and incentives to encourage new and existing businesses to undertake electronics recycling.



3. MARKET DEVELOPMENT:

Create mechanisms such as tax incentives that encourage a profitable and sustainable electronics-recycling infrastructure.

4. REGULATORY:

Consider state re-adoption of Resource Conservation and Recovery Act (RCRA) Subtitle C, allowing Iowa hazardous waste regulations to be implemented and enforced by state government regulatory agencies. Currently, these responsibilities are solely that of the federal government.

5. EDUCATION:

Create educational programs to aid in understanding and awareness of electronics waste management issues, and to encourage the recycling of electronics.

For a complete copy of the strategy report, go to the Iowa DNR's Web site at: www.iowadnr.com. For more information, contact Jeff Myrom with the DNR at (515) 281-3302, e-mail: Jeff.Myrom@dnr.state.ia.us



E-Waste Rules Update:

In 2002, the Iowa legislature charged the DNR with establishing administrative rules for electronic waste recycling. To date, the agency has drafted rule recommendations, which will be in Iowa Administrative Code 567-Chapter 122 "Electronics Recycling."

As a next step, a "Notice of Intended Action," which begins the rulemaking process, will probably be presented to the Environmental Protection Commission in February 2004. The public comment period will begin on the date of the commission meeting and extend until the public hearing, which is anticipated to be in early April. Final rules are expected to be complete by the summer or fall of 2004.

For more information or to submit written comments to the rules, contact Jeff Myrom at (515) 281-3302 e-mail: Jeff.Myrom@dnr.state.ia.us

E-WASTE FACTS:

- Approximately 220 million tons of E-Waste are generated annually in the United States.

- If current trends continue, the amount of computers landfilled annually in the United States will be equal to a pile the size of a football field and a mile high by 2004.

- The average life span of a computer today is two years.

- Consumers have, on average, two or three obsolete computers in their garages, closets or storage spaces.

- According to the EPA, the volume of E-Waste is rising 3-5 percent each year -- almost three times faster than the municipal waste stream.



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Formerly
WRAP Program

DNR Offers Compost Rebates

DID YOU KNOW?

More than 67 percent of the municipal solid waste produced in the United States (including paper) is compostable material.

Construction and landscape contractors can save money on compost through a rebate program offered by the Iowa DNR.

The program is designed to encourage water quality efforts through the re-use of organic waste

vegetation establishment, turf maintenance, and establishing or maintaining nursery stock.

The rebate is worth \$5 or 50 percent off per cubic yard of compost, whichever is less. The discount is available to any non-

residential entity purchasing compost for the first time. Iowa Dept. of Transportation (DOT) contractors are eligible, even though the DOT previously has participated in the program.

For more information,

contact Jeff Geerts with the DNR at (515) 281-8176; e-mail: Jeff.Geerts@dnr.state.ia.us



materials. Projects eligible for the rebates include erosion control, storm water management,

NO MORE CHEMICALS: Use of compost can reduce the need and use of synthetic fertilizers and pesticides.

October SWAP Announcements

The following SWAP (Solid Waste Alternatives Program) awards are announced:

Phoenix E-Waste Solutions, Inc of Marshalltown was awarded \$30,750 to establish a facility serving electronic recycling needs of central Iowa.

21st Century Equipment of Garnavillo received \$197,941 to develop a single-step process for converting asphalt shingles to a usable form in hot asphalt mix paving projects.

Midwest Sawdust of Spencer was awarded \$225,000 to expand its wood waste processing facility in Waterloo. The facility will manufacture wood pellets for use in wood burning stoves.

Vermeer Manufacturing of Pella was awarded \$20,000 to

conduct asphalt shingle grinding tests as part of a new product line.

Planning for Solid Waste Solutions of Mystic received \$33,250 to conduct an analysis of Iowa's electronic waste programs, identifying barriers to new e-waste program implementation, and developing cost effective collection and recycling programs.

Bremer County Recycling in Waverly was awarded \$20,000 to expand and improve the countywide drop-off-recycling program by increasing container size and adding additional materials accepted.

U.S. GreenFiber, Inc. of Norfolk, NE was awarded \$40,000 to purchase equipment for recycling alternative fiber products such as newspaper cores,



Farming & Composting:

One way to use compost is to mulch horticultural crops. Dean Henry from the Berry Patch Farm in Nevada has used 223 cubic yards of compost to mulch his berry fields and to improve soil quality.

Henry used the compost on the farm's raspberry fields and also in the soil where he will plant strawberries in the spring. The compost enables the farm to control weeds, cut down on fluctuations of moisture around the plants and increase fertility using organic matter, he said.

"I have been impressed with the quality of the compost, and it has definitely cut costs," Henry said. "I plan to use more of it and take advantage of the opportunities provided by the program."

Henry has researched the use of compost in other areas of the United States and feels its use can improve the quality of crops.

"We are able to cut down chemical usage, which is something we are trying to get away from," he said. "We have been successful considering the extensive scale we covered."

phonebooks, boxboard and other non-newsprint material sourced through Iowa. The company manufactures cellulose insulation.

Ag Bio-Power, LC of Toledo received \$24,500 to install a gasification system using waste wood and corn for the incineration of waste paint filters at an Iowa facility.



Recycling Property Tax Deadline Approaches

Recycling centers and manufacturers of recycled products may be missing out on an opportunity to take advantage of a property tax exemption.

Iowa law provides a tax exemption for personal property and improvements to real property used in the processing of waste plastic, waste paper, waste wood or waste paperboard into a new raw material, or product composed primarily of recycled materials. In

the spring of 2003, the Iowa legislature expanded the law to include processing of waste wood products.

The deadline for applying for the tax exemption is February 1, 2004 for the first year the exemption is requested.

To review the pollution control and recycling property tax exemption administrative rules, visit Iowa Administrative Code chapter 561-11 at:

www.legis.state.ia.us/Rules/Current/iac/567iac/56711/56711.pdf

The DNR will begin updating the administrative rules this winter to reflect the inclusion of wood waste processing.

For more information or a tax exemption application, contact your local county assessor or Jeff Geerts of the DNR at (515) 281-8176; e-mail: Jeff.Geerts@dnr.state.ia.us



RECYCLED CONTENT:

- Retreaded tires contain 75 percent recycled content.
- New tires contain no more than 2 percent recycled rubber.

Apply for Processed Tire Products Rebates

Iowa businesses and agencies interested in purchasing processed tire products can apply for rebate money through the Iowa DNR.

Through the program, companies receive a 50 percent "rebate," up to \$10 per ton, for purchased processed tire products such as tire-derived fuel, tire chips for landfill leachate system construction, and other value-added uses for processed tires.

The DNR has \$300,000 for the program that must be used before June 30, 2004. To qualify, applicants must plan to purchase the equivalent of 250,000 processed tires (2,500 tons) before that date.

Holcim Cement, Mason City; Winneshiek County Landfill, Decorah; and North Central Iowa Landfill, Fort Dodge have already been approved to receive funds

from the program.

Funding is provided by the Waste Tire Management Fund, which receives revenues from a portion of a \$5 surcharge on the issuance and transfer of motor vehicle titles.

For more information contact Mel Pins with the DNR at (515) 281-8489 or by e-mail: Mel.Pins@dnr.state.ia.us



"TIRED" OF WASTE?

- Iowa alone generates 2.8 million scrap tires a year.
- 75 percent of waste tires generated annually in the United States are recovered and recycled.

New Electronic Recycling Programs Can Receive \$10,000 in Funding

Apply now for 2004 funds

SWAP helps programs:

- ♦ focus on the sustainable and ongoing management of electronic waste
- ♦ increase recycling opportunities throughout Iowa

For more information: Theresa Stiner (515) 281-8646
theresa.stiner@dnr.state.ia.us

Previous grants awarded to:

Benton County Landfill • Floyd-Mitchell-Chickasaw Solid Waste Management Agency
Iowa City Landfill and Recycling Center • Metro Waste Authority • Siouxland Regional Recycling Center



On the HORIZON

Upcoming events in the
world of waste management

January 31, 2004: Application Deadline

DNR's Pollution Prevention Intern Program application deadline for students and companies. Contact Program Coordinator Jan Loyson at (515) 281-3142, e-mail: Jan.Loyson@dnr.state.ia.us

February 11, 2004: DNR Solid Waste Client Contact Meeting

Iowa's regulated solid waste facilities are invited to attend an open discussion and Q/A session related to solid waste issues in Iowa. Contact Jane Mild at (515) 281-5105, e-mail: Jane.Mild@dnr.state.ia.us

February 23 & 24, 2004: Compost End User Workshop

Presented by Ron Alexander. Feb. 23, Coralville -- compost marketing training. Feb. 24, via Iowa Communication Network -- all-day workshop for end users of compost with an afternoon session for landscape architects. Contact Jeff Geerts at (515) 281-8176, e-mail: Jeff.Geerts@dnr.state.ia.us

April 1, 2004: Application Deadline

DNR's Solid Waste Alternatives Program deadline to apply for funding. Contact Tom Anderson at (515) 281-8623, e-mail: Tom.Anderson@dnr.state.ia.us

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