

# Air and Waste Matters

DNREC Division of Air and Waste Management

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## Wilmington Residents Earn RecycleBank Dollars



What can two high school buddies from the streets of Philadelphia come up with in their spare time?

Well, if the two guys are Philly-natives Patrick Fitzgerald and Ron Gonen, how about a hot, new, socially responsible, environmentally-friendly recycling business that pays you, the customer, to use it? Wilmington residents are currently using RecycleBank to boost their recycling rates and earn reward coupons or RecycleBank Dollars.

Fitzgerald developed the idea for RecycleBank in between his law school classes at Fordham University Law School in New York City. In 2002, New York City Mayor Michael Bloomberg wanted to do away with recycling in the city because low participa-

tion rates were causing high city contribution costs. Fitzgerald wondered how the city could increase participation, and thought perhaps a little green could provide greener results!

Fitzgerald realized that there were a number of environmentally-aware companies willing to offer reward coupons to homeowners for recycling as a form of advertising. With the help of his high school friend, Ron Gonen, who was in the process of finishing his MBA at Columbia University's Business School, the two were able to obtain a \$100,000 grant from Columbia. The seed money was used to start the new Philadelphia business, RecycleBank, in 2004.

*(Continued on page 2)*

## Ciba Specialty Chemicals Recognized at TRI Data Release

The annual Toxics Release Inventory (TRI) data for 2005 from Delaware facilities compiled by the Department of Natural Resources and Environmental Control (DNREC) was released at a ceremony at Ciba Specialty Chemicals on March 6.

The event recognized Ciba for outstanding environmental performance over the last several years. Since 1998, Ciba has reduced its on-site releases of chemicals reported to the TRI program by 60 percent, while increasing production almost 80 percent. On a production-adjusted basis, on-site releases in 2005 were down 77 percent compared to 1998.



**Ciba Specialty Chemicals' Site Manager Rudy Merstetter was awarded a DNREC Certificate of Appreciation by Secretary Hughes at the press event.**

*(Continued on page 3)*

## Wilmington Residents Recycle Continued...

(Continued from page 1)

So how does it work? With two Generation X entrepreneurs at the helm, RecycleBank is naturally a very high-tech business. Wheeled totes (just like wheeled garbage containers) are provided to customers with computer chips combined with a bar code, or "smart waste" tags, imbedded in the totes. The radio frequency identification (RFID) technology tags correspond to each household address, provide homeowner information and include an online account number with RecycleBank.



### Recycling Collection Truck in Wilmington

The collection trucks in Wilmington are equipped with computers to scan the barcode on the tote, calculate the weight of the recyclables and store the data, which is credited to the home in the form of RecycleBank Dollars. Single stream recycling also adds to the convenience for Wilmington residents. Customers can check their RecycleBank balances online and review the environmental impact of their efforts in number of trees and gallons of oil saved. Wilmington residents have done an amazing job of

recycling. So far, they have saved 14,260 trees; 5,871,600 gallons of water and 933,165 gallons of oil. This in turn has saved money on landfill disposal costs for the city, by diverting 1,398 tons from the landfill. Revenue is also generated by the sale of the recycled goods to Philly-based Blue Mountain Recycling, which uses sorting technology including magnets, fans, gravity, and good-old-fashioned manual picking to sort the recyclables.

In Wilmington, the recent pilot program jumpstarted the city's previously low recycling percentage rate, and cut costs on money spent in annual trash collection. Wilmington resident Yoletta Parker said, "I love the benefits, especially the free movie tickets to Regal Cinema and discount coupons for grocery stores. I can't believe that my garbage is worth so much!"

Many other residents must feel the same way, as according to the latest figures, Wilmington's trial area has gone from a recycling rate of nearly zero to well over 30%. Based on the success of the trial area, Wilmington will soon be expanding the program during the spring of 2007 to include all of Wilmington.

Article by C. A. Wirtz, DAWM

### RecycleBank Dollars for Conley Ward's

## What are RecycleBank Dollars?

RecycleBank Dollars consist of coupons to dozens of local businesses including **Borders, Conley Ward's, PETCO, Rite Aid, Staples, Starbucks, and ShopRite**, as well as **FREE** movie tickets to **Regal Cinema and Theater N** in Wilmington! Households may earn as much as \$35 per month; however, on the average people earn approximately \$10 per month. This is a great value for families over a year's time. Please note that participating businesses may change monthly. More information on RecycleBank can be found at: <http://www.recyclebank.com/>.

For more information on recycling, please visit DNREC's recycling website page at: <http://www.awm.delaware.gov/Recycling.htm>.

## Ciba Recognized at TRI Data Release *Continued...*

*(Continued from page 1)*

“We are proud to recognize Ciba Specialty Chemicals for helping protect Delaware’s natural resources by improving its performance in the 2005 TRI reporting program,” said DNREC Secretary John A. Hughes. “The Ciba facility has made significant strides in controlling and reducing pollution through aggressive programs aimed at finding more environmentally-compatible solutions for producing products.”

Ciba was the first chemical company to adopt the United Nations Committee for Trade and Development guidelines for reporting eco-efficiency indicators. This system describes a detailed method to calculate environmental performance data and relate the data to financial performance figures.

Statewide, TRI on-site releases reported in Delaware for 2005 were lower by 18 percent when compared to 2004. This was in part due to coal-fired power plant emissions reflecting lower amounts of incoming impurities in 2005.

When compared with 1998 data, on-site releases in Delaware for 2005 were lower by 29 percent. For 2005, on-site releases totaled 8.4 million pounds, down

from the 10.3 million pounds reported for 2004, and down from the 11.9 million pounds reported for 1998.

However, analysis of 2005 toxic waste data indicates that TRI-reported total toxic waste, including on-site releases, transfers off-site, and waste managed on-site, increased 4.4 percent compared to 2004. This increase was due in large part to waste amounts in the on-site waste management category.

Waste amounts in the on-site waste management category include wastes that are recycled. Amounts in this category are large and can fluctuate by several million pounds in a year depending on how individual facilities manage their waste. In 2004, for example, on-site waste management decreased by 7.5 percent and led to the overall result of a 3.5 percent reduction for 2004 TRI-reported total toxic waste.

The TRI summary report for 2005 is available at: [http://www.serc.delaware.gov/information/TRI/2005/TRI\\_Data\\_Summary\\_Report.shtml](http://www.serc.delaware.gov/information/TRI/2005/TRI_Data_Summary_Report.shtml). The TRI data detail report for calendar year 2005 can be found at: [http://www.serc.delaware.gov/information/TRI/2005/TRI\\_Data\\_Detail\\_Report.shtml](http://www.serc.delaware.gov/information/TRI/2005/TRI_Data_Detail_Report.shtml).

DNREC Press Release, 3/16/07

## DELAWARE EPCRA REPORTING PROGRAM

The federal Emergency Planning and Community Right-to-know Act (EPCRA) was passed by the United States Congress in 1986. In 1991, the State of Delaware passed its own Emergency Planning and Community Right-to-know Act, which built upon the federal requirements and created a funding mechanism for emergency planning activities. These laws established a series of reporting requirements impacting facilities ranging from large industrial sites to small businesses. Facilities can be required to report on a variety of information, ranging from chemicals used and stored at the site, to chemicals released to the environment. The Delaware EPCRA Program, within the Division of Air and Waste Management’s Emergency Prevention and Response Branch, is responsible for the collection and dissemination of information reported under the federal and state EPCRA laws.

Most of the information contained in the reports from facilities is publicly available. Hazardous Chemical Inventory and related information is entered into a computer system for distribution to emergency planning and response organizations statewide. **Toxics Release Inventory Data** is also computerized, and annual reports prepared and released to the public. For more information on the types of data and reports available, please visit: <http://www.serc.delaware.gov/public.shtml#facinfo>.

**The results of a stack test done in December 2006 indicated a 40% reduction in mercury emissions compared to the test done earlier in the year. Claymont Steel is continuing to look at additional ways to reduce its mercury emissions in accordance with DNREC's Order.**

## Reducing Mercury Emissions

**M**ercury is a metal that, once released into the environment, can accumulate in fish tissue to levels high enough to spark fish consumption warnings. Because of mercury's persistence in the environment, DNREC decided to take new, more stringent measures to reduce mercury releases. DNREC's Pollution Prevention Program was the first off the block with an education program for medical and allied health professionals on preventing releases of mercury from thermometers and devices like blood pressure cuffs.

The education program was followed by a focus on mercury air emissions. Prior to 2006, DNREC believed that the Occidental Chemical (Oxychem) Company facility in Delaware City was the largest emitter of mercury to Delaware's air, followed by Delaware's power plants (Edgemoor and Indian River). This belief led DNREC to adopt new air quality regulations in November 2006 that require power plants to reduce mercury emissions by more than 80%. Under these regulations, initial reductions are required by May 2009 and full compliance is required by January 2012.

When Oxychem decided to close down its production line that used mercury, the Division's Air Quality Management Section (AQMS) took a closer look at other sources of mercury in the state. Since regulations were being implemented to control mercury emissions from the power plants, the AQMS moved to the next source on the list of mercury emitters.

According to emission estimates submitted to the Division through the Toxic Release Inventory (TRI), Claymont Steel (formerly Citisteel), was the next largest emitter of mercury. Because Claymont Steel submitted estimates of mercury emissions based on mathematical calculations, rather than actual emission testing (a standard and acceptable practice under TRI), the Division requested that the company undertake stack sampling for mercury. The results were staggering.

Claymont Steel previously reported mercury

emissions ranging from 28 to 39 pounds per year over the past five years. The stack testing of air emissions conducted in 2006 indicate that mercury emissions from the facility's electric arc furnace (EAF, the device used to melt scrap metal), were 360 pounds per year with a potential to reach or exceed 500 pounds per year with the plant operating at full capacity.

Upon learning the results of the Claymont Steel stack test, DNREC ordered Claymont Steel to reduce mercury emissions from its EAF, either by reducing the mercury entering the furnace or by using end-of-pipe controls.



**Claymont Steel's Electric Arc Furnace**

The facility immediately discontinued the use of municipal scrap metal as a first step in reducing mercury emissions, as some household appliances, such as washers and dryers, can also contain mercury switches.

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*From DNREC Press Release, 11/30/06*

## ELVS Comes to Delaware

Claymont Steel, formerly CitiSteel, uses scrap vehicles to make steel slag at its facility in northern Claymont. Another potential source of mercury in Claymont Steel's emissions can come from mercury switches found in some automobile makes and models. DNREC is working with the auto salvage yard industry to remove these switches prior to scrapping vehicles.

In order to assist Claymont Steel in reducing its mercury emissions, and to prevent other releases of mercury into Delaware's environment, the Department of Natural Resources and Environmental Control (DNREC) asked ELVS to come to Delaware.

ELVS stands for "End of Life Vehicle Solutions," a non-profit corporation created by the auto industry to promote recyclability, education, outreach and proper management of substances of concern. In 2006, ELVS formed the National Vehicle Mercury Switch Recycling Program (NVMSRP).

The goal of the NVMSRP is to remove mercury switches from automobiles before the steel in the vehicle is recycled. Mercury switches can be found in convenience lights in trunk and hood compartments and in anti-lock braking system (ABS) modules of some vehicles built before model year 2003.

Last December, 63 Delaware scrap and salvage dealers were invited to participate in NVMSRP to remove and recycle mercury switches from pre-2003 vehicles before they are crushed, shredded and melted down as part of the steel recycling process. Mercury can be released to the environment during any of these three steps.

By participating in the NVMSRP, scrap and salvage dealers are eligible to receive, on a first-come, first-served basis, \$1 for each mercury switch lighting assembly and \$3 for each anti-lock braking system (ABS) module removed and submitted. Switches do not need to be removed from assemblies. Payments out of a \$4 million fund began in

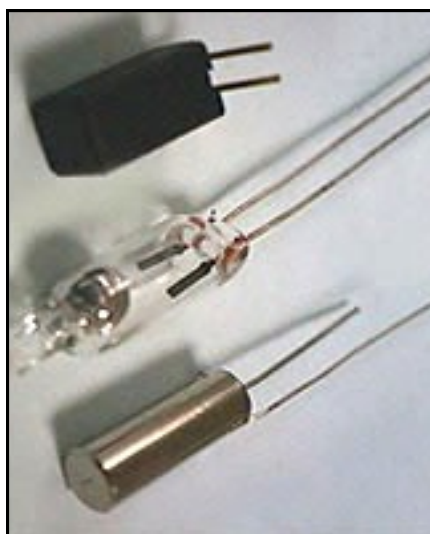
January 2007, with switches sent in before January 1 eligible for compensation.

ELVS will send participants, free of charge, a mercury switch collection bucket, updated educational materials, a list of vehicles with the potential to contain mercury switches, and a detailed instruction sheet on shipping full collection buckets. The buckets are returned with postage paid and additional buckets are available on request, also at no cost.

As of January 20, seventeen of Delaware's scrap and salvage dealers had signed up for the program. The Department continues to encourage scrap and salvage dealers to participate through additional mailings. To join the program or for more information, please contact ELVS at 877-225-ELVS (3587) or visit: <http://www.elvsolutions.org/>.

For more information on Delaware's mercury switch program, please contact Karen G. J'Anthony of the Division's Solid & Hazardous Waste Management Branch at 302-739-9403 or [karen.janthony@state.de.us](mailto:karen.janthony@state.de.us).

*Article by Marjorie Crofts, DAWM*



**Mercury Switch Used in Auto Industry**

**ELVS stands for "End of Life Vehicle Solutions," a non-profit corporation created by the auto industry to promote recyclability, education, outreach and proper management of substances of concern.**

## Yard Waste Ban Postponed

Although the yard waste ban in northern New Castle County has been postponed until January 2008, there is still much to do about yard waste. Why not get a head start on some greener options for disposal, such as composting those bags of grass clippings and weeds? DNREC can help you find the best option available for your home and community.

DNREC's Division of Air and Waste Management, the Delaware Solid Waste Authority (DSWA), local communities, state legislators and small businesses have all worked together in 2006 and 2007 to provide you with some easy and inexpensive options for disposing of yard waste in New Castle County. DSWA and the Division have been holding joint public presentations about the yard waste ban since the fall of 2006 to provide homeowners with "how to" information on reasonable solutions for yard waste disposal. Please check the schedule for the next available presentation at: <http://www.dnrec.delaware.gov/NR/rdonlyres/7179BE8F-958F-451E-98CE-6CEAB3375DCD/0/ScheduledPublicPresentationsontheYardWasteBan13007.pdf>.

As outlined in the public presentations, you might want to first consider managing your yard waste by composting, mulching or using a mulching mower. If you are unsure how to begin, you may want to attend a class on composting. These classes are offered for a nominal fee through the University of Delaware and Delaware State University Cooperative Extension. The class schedule is available at: <http://www.dnrec.delaware.gov/NR/rdonlyres/DB30459F-CC22-4CF3-885E-B9772186BD5C/0/compostingopportunities2007B.pdf>.

Additional composting help is also available from Hetty E.



Hetty Francke Teaching Brandywood Students

Francke, Master Gardener/Master Composter at the University of Delaware's Cooperative Extension Office. Francke has built four compost demonstration sites in Delaware with the support of volunteer groups. These sites demonstrate six ways to practice environmentally friendly composting. Signs provide information on each of the six units, and a nearby brochure box holds additional information about composting. The demonstration sites are located at:

- Bellevue State Park, Wilmington, New Castle County;
- Behind the Candlelight Theater, Ardentown, New Castle County;
- Killens Pond State Park, Felton, Kent County; and
- Trap Pond State Park, Laurel, Sussex County.

For more information and scheduling, please contact Francke by e-mail at [hettyw@udel.edu](mailto:hettyw@udel.edu) or call her at (302) 475-9157.

In addition, most private haulers now offer a yard waste pickup service. The service cost ranges from no extra cost to \$12 per month. Contact your regular trash hauler to see if they have a plan for handling yard waste, and shop around for the best price. If you already participate in DSWA's Curbside Recycling Program, DSWA charges an additional \$3.00 per month for yard waste collection. For more information on DSWA's program, please visit DSWA's website at: <http://www.dswa.com/>. Other options for yard waste drop off or collection are detailed on DNREC's website at:

<http://www.dnrec.delaware.gov/yardwaste/YardWasteHomeowners.htm#GreenBusiness>.

DNREC is also developing a community mulch site as a pilot project in cooperation with New Castle County Conservation District and DelDOT. Rep. Valerie J. Longhurst requested the pilot program and noted that these sites are commonplace in 23 other states that have a ban on yard waste disposal. When the community yard waste site opens, residents can simply drop off their yard waste and at the same time, pick up mulch created from the yard waste at no cost to them.

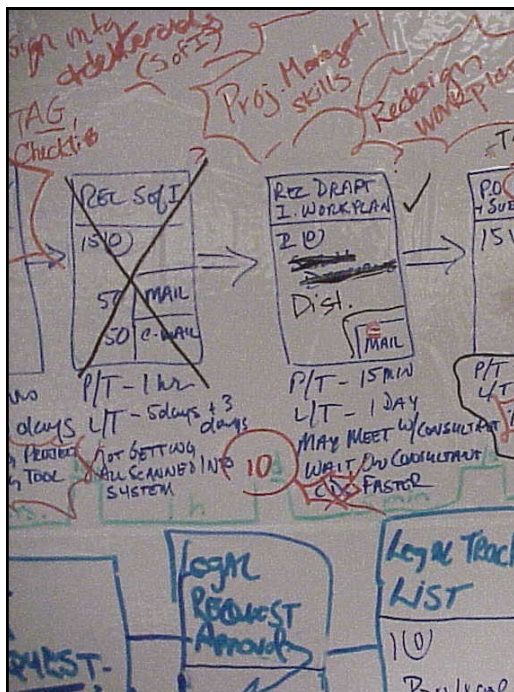
Finally, you might be able to establish a neighborhood yard waste compost or mulch site in your community. DNREC is continuing to pursue legislation that would provide a funding stream for community recycling efforts around the state. Local governments and the private sector could access these funds to establish yard waste mulch sites and other recycling initiatives in their communities.

Article by C. A. Wirtz, DAWM

## Air Permitting, Brownfields Cleanup and LUST Cleanup Get Lean!

No, the Division hasn't cut programs, nor has its staff started a weight loss regime. Instead, it has started to adopt Lean principles that are widely used in industry. These principles include being responsive to customers, first-time quality, waste minimization, continuous improvement, flexibility, and relationship building.

Back in August 2005, the Air Quality Management Section (AQMS) began working with the Delaware Manufacturing Extension Partnership (DEMEP) to see how the Lean principles could be applied to permitting processes. The process started with one permit called the Regulation 2 Construction Permit, a permit required to build new equipment that will emit air pollutants.



**Mapping the Brownfields Process in SIRB**

Using a tool called “Value Stream Mapping,” each step of the permitting process was diagrammed, from receiving the application to issuing the permit. Mapping the “current” process showed that it took an average of 104.5 days to issue the permit, and that less than 1% of the permit applications made it through the permitting process without rework.

Based on the findings from the “current state” map, AQMS staff redesigned the permit application and prepared guidance on how to fill out the application, pre-

pared several “templates” for staff to use, and set up a tracking board for each permit application. The goal was to cut down the time to issue this permit from 104.5 days to 90 days (assuming there was no request for a public hearing).

The result? The AQMS reduced the time it takes to issue a Regulation 2 construction permit from 104.5 days to within 60 days. And the permit backlog has been reduced from 199 to 15 permits over the past year. The success of using Lean and Value Stream Mapping led to two things. First, General Motors gave the Division its corporate “Speed Demon” award. This is the first time GM has given this award to a team outside of its corporation. Secondly, DNREC decided to apply Lean to other Divisional processes.

AQMS is currently working on the Synthetic Minor permit process now, with the goal of reducing the permitting time from 7 months to 4 months. The Division’s Site Investigation and Restoration Branch has mapped the Brownfields remediation process and is taking steps to reduce the process time by six months. And the Division’s Tank Management Branch has mapped the leaking underground storage tank (LUST) corrective action process and is working to reduce the internal process time for sites that go through investigation and remediation from 11 to 6½ months.

The Division is planning to train some of its staff on how to lead Lean and Value Stream Mapping initiatives so that eventually these principles and processes will be applied to all of our systems, from administrative to technical. Some of the changes will be easy to implement, like scanning documents and e-mailing them between our Dover and New Castle offices instead of transporting them by courier, saving two days. Others, such as developing specific guidance on how to conduct a site investigation for a LUST, will take more time.

*Article by Marjorie Crofts, DAWM*

### Interested in Learning More about Lean and Value Stream Mapping in the Division?

For the Division, please contact Marjorie Crofts at [marjorie.crofts@state.de.us](mailto:marjorie.crofts@state.de.us) or (302) 739-9400.

For information on the Air Program, contact Amy Mann at [amy.mann@state.de.us](mailto:amy.mann@state.de.us) or (302) 323-4542.

For information on Brownfields, contact Kathy Banning at [kathleen.stiller@state.de.us](mailto:kathleen.stiller@state.de.us) or (302) 395-2600.

For Tanks, please contact Jenn Roushey at [jennifer.roushey@state.de.us](mailto:jennifer.roushey@state.de.us) or (302) 395-2500.

**DELAWARE  
DEPARTMENT OF  
NATURAL  
RESOURCES AND  
ENVIRONMENTAL  
CONTROL**

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We're on the web!  
[www.awm.delaware.gov](http://www.awm.delaware.gov)

Visit the Statewide  
Calendar of Events  
at:

<http://www.delaware.gov/egov/calendar.nsf/FutureMeetings/ByDepartment?openview&Agency=Natural%20Resources%20and%20Environmental%20Control>

for a complete listing  
of the Department's  
events.



## **Integrity, Respect and Customer Focus**

The Division of Air and Waste Management oversees the handling, transferring and storing of solid and hazardous materials by regulating, monitoring, inspecting, enforcing and responding to emergencies. The Division also implements the state's air monitoring, permitting and compliance programs. The Division's responsibilities include administering air and waste programs including:

- Delaware's Air Quality Section — air monitoring and regulating air emissions.
- Tank Management Branch — maintenance and installation of underground and above ground storage tanks & overseeing cleanup of tanks which may leak.
- Emergency Prevention and Response Branch — preventing industrial accidents, assuring emergency planning and community right-to-know, and responding to environmental emergencies.
- Enforcement Section — the Environmental Protection Officers enforce the state's air, waste and water pollution laws, and participate on DNREC's Environmental Response Team by responding to environmental emergencies.
- Site Investigation and Restoration Branch — remediation of sites contaminated by hazardous substances (Superfund/Brownfields/Voluntary Cleanup Program).
- Solid and Hazardous Waste Management Branch — reuse, recycling, transport and disposal of solid and hazardous waste.

## **EASY REFERENCE PHONE NUMBERS**

24-Hour Report and Spill Notification Line - 1-800-662-8802  
Aboveground Storage Tanks - 302-395-2500  
Air Quality - Dover Office - 302-739-9402  
- New Castle Office - 302-323-4542  
Asbestos - New Castle - 302-323-4542  
- Kent & Sussex - 302-739-9402  
Boiler Safety - 302-744-2735  
Brownfields - 302-395-2600  
Emergency Prevention and Response - 302-739-9404  
Enforcement - 302-739-9401 or 1-800-662-8802  
Hazardous Waste - 302-739-9403  
Medical Waste - 302-739-9403  
Open Burning - 302-739-9402  
Outreach Ombudsman - 302-395-2515  
Recycling - 302-739-9403  
Site Investigation & Restoration Branch (Superfund/Brownfields) - 302-395-2600  
Solid Waste - 302-739-9403  
Underground Storage Tanks - 302-395-2500

## **DID YOU KNOW?**

The **Division's Emergency Response Group** has moved! In May 2006, the emergency responders moved along with the **Division's Enforcement Section** to a new location in Dover. The two sections are now located just off of Route One at Exit 104 in a building formerly occupied by Delaware Department of Transportation.