



## Environmental Protection Matters

DNREC Office of Environmental Protection

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### Highlights in this edition include:

**Brownfields  
Under  
Construction** 2  
*Continued...*

**What to  
Recycle?** 3

**Brownfield of  
Dreams** 4

**Brownfield of  
Dreams** 5  
*Continued...*

**Dioxins in My  
Backyard?** 6

**Holy Toledo,  
Batman, Ozone  
Season Strikes  
Again!** 7

**More  
Information** 8  
*on the Office of  
Environmental  
Protection*

### Brownfields Under Construction

**If** you were to stop by DNREC's Division of Waste and Hazardous Substances' Site Investigation and Restoration Section (SIRS) today, or tomorrow, or even the next day, you would arrive just in time to see what SIRS does best: cleaning up contaminated properties and safely transforming them into economic engines.

Combine that with Governor Jack Markell's vision for "Building Delaware's Future Now" and you have a sure recipe for rejuvenating whole communities in Delaware.

Breathing new life into old, contaminated sites and creating shovel-ready opportunities for redevelopment is no easy task. However, environmental stewardship and revitalization go hand-in-hand in the world of SIRS, making our communities safer and healthier.

So when Governor Markell proposed a significant investment in brownfield redevelopment and environmental cleanup projects last May, SIRS' response was, "Let's go!"

The Governor proposed an allocation of

*(Continued on page 2)*



T. Ratsep, SIRS

**Governor Jack Markell, DEDO Sec. Alan Levin, Rep. Michael Ramone, WSFS Bank President and CEO Mark Turner, and DNREC Sec. Collin O'Mara at the ribbon cutting ceremony for WSFS Bank's new regional headquarters and branch on June 14, 2012.**

## Brownfields Under Construction *Continued...*

\$3.157 million from increases in projected state revenues to DNREC. This was earmarked for brownfield and other environmental cleanup projects.

The Governor also recommended the restoration of \$1 million a year back to the HSCA fund two years early. This is money that had been diverted to the General Fund in 2009.



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**Looking northeast across the former Chrysler site; recycling piles in foreground.**

HSCA is the state's fund for cleaning up contaminated properties. This includes funding the state's 10% share for federal Superfund sites, and investigating and cleaning up state Superfund or "HSCA sites" when there is no responsible party. This also includes some aboveground and underground storage tank sites, and most emergency response cleanups. Plus, HSCA provides grant funding for brownfields.

Investing in brownfield and environmental cleanup projects just makes plain sense and cents – turning each state-invested dollar into \$17.50, based on a University of Delaware study on the economic benefits of developing brownfields.

Just look at the changes at the former Chrysler plant in Newark, which is now UD's new Science, Technology and Advanced Research (STAR) campus. Redeveloping the new STAR Campus represents the largest-ever expansion of UD's Newark Campus. Once completed, the site could also accommodate a transit-oriented project with both retail and residential space.

Plans have been finalized to bring the first tenant, Bloom Energy, Inc. to the site. Bloom Energy plans to manufacture solid oxide fuel cells onsite, which will form the basis for a new, high tech manufacturing hub in Delaware.

Other cleanup projects supported by the allocation include: the new WSFS bank location at the former Kirkwood Highway Gulf Station site (photo, p. 1); the Kalmar Nyckel site and affordable housing in Wilmington (see pages 4-5); and the Delaware State University research park.

Several much larger brownfield projects are also being funded, such as the restoration of NVF Yorklyn. This historic site will soon see mixed economic development including a museum and state park preserve.

Redevelopment of environmentally-impaired property transforms what is often years of blight and abandonment into tax revenue-producing gems that revitalize communities. SIRS is proud to be part of the transformation.

*Article by C. Wirtz, WHS*

## What to Recycle?

**So** you think you know what to recycle? For recycling enthusiasts who may still be novices, “Everything!” sounds like the right answer, but it actually depends on the recycling center’s capabilities. And different commercial and municipal waste haulers use different recycling centers with — you got it — different single-stream capabilities. What’s an eco-minded person to do?

Check the new DNREC *How to Recycle—A Guide to Recycling in Delaware*, now available on the web at:

[http://portal.delaware.gov/recycling/downloads/howtorecyclebooklet\\_opt.pdf](http://portal.delaware.gov/recycling/downloads/howtorecyclebooklet_opt.pdf).

Most people do not realize that recycling centers have several people on hand to sort out the non-recyclables. What seems like it should be recyclable may in fact cause more problems than it’s worth on the conveyer belt to a new life.

Standard recycling no-no’s include any food-coated items (that’s napkins and paper plates); used aluminum foil or trays; clear plastic film wrap; #3 (polyvinyl chloride or PVC) and #6 (polystyrene) plastic shell packaging; waxed paper products; electronics (except at designated locations); ceramics; cookware; window glass and mirrors; light bulbs and anything Styrofoam (cups, plates and packing materials).

Individual waste haulers may further restrict items, adding plastic grocery bags and Tetra Paks to their list of non-recyclables. Tetra Paks are the aseptic juice, milk and soup cartons that provide extended shelf-life. The cartons combine paper, plastic, and sometimes even metal, making them difficult to recycle.



Fortunately, waste haulers must provide their customers with a list of recyclables they will accept. Best to stick to it. Although the goal is to maximize the amount of material for recycling, all recyclables are not created equal, nor are recycling centers!

Now that waste haulers provide single-stream recycling collection to single-family residential customers and restaurants/bars, everyone wants to recycle correctly. And with multi-family residential recycling coming at the end of the year, being well-informed is key to minimizing the amount of trash disposed in Delaware.



Recycling reduces our disposal costs, keeps raw materials in the manufacturing sector, creates jobs, and promotes sustainability. So don’t put a cramp in your going green style; check the new recycling guide and recycle responsibly and knowledgeably!

For more information on recycling, please visit:

[www.recycling.delaware.gov](http://www.recycling.delaware.gov)

Article by C. Wirtz, WHS

## Brownfield of Dreams

**W**ilmington residents have a new place to call home in the Brandywine Village area. The new Mill Stone Townhomes, located at 97 Vandever Ave., are completed and ready for move-in. For the dedicated residents, who also helped build the homes, it is a dream come true.

Habitat for Humanity of New Castle County redeveloped the property into 21 affordable housing units for the community. But before the property could be used for new homes, the contamination at the site had to be addressed.

The site is a Brownfield — defined as vacant, abandoned or underutilized property, resulting from environmental contamination, or sometimes, even the perception of contamination.

Previous operations included a cotton mill, a textile manufacturing facility, a tobacco company, a phonograph company, a dry cleaner/laundry service, an auto body shop, and as Moyer Academy elementary school. Although a Brownfield, the site was paved, so it did not pose a risk to the students at Moyer Academy.

With such a varied historical past, many of the site operations may have included hazardous substances. However, Brownfields cleanup is DNREC's Site Investigation and Restoration Section (SIRS) specialty. For over a year, the site cleanup was carefully overseen by SIRS.

The site surface soils were impacted by chlorinated solvents and by polycyclic aromatic hydrocarbons (PAHs). The contamination may have

resulted from the dry cleaner/laundry service that was located in the northeast portion of the site, and from historic filling of the property.

In groundwater, tetrachloroethane (PCE), vinyl chloride, 1,1-dichloroethene, and manganese were detected above DNREC standards. Fortunately, groundwater is not being used at the site. The site is located within the City of Wilmington's groundwater management zone (GMZ), which restricts its use.



*Habitat for Humanity of NCC representatives, residents, friends, and officials gather for the ribbon-cutting ceremonies at the new Mill Stone Townhomes site in May 2012.*

A site evaluation was performed for potential vapor intrusion, which showed that the vapors from both the groundwater and soils may pose an unacceptable risk to the future residents. Therefore, a vapor barrier system was installed under the building slabs or in the crawlspaces to prevent the migration of site soil gas into the residences.

In addition, several tons of PAH-contaminated soils were excavated from a 430-square foot area as an interim remedial action.

DNREC's clean-up plans also included the installation of a cap and cover system made up

*(Continued on page 5)*

### Brownfield of Dreams *Continued...*

of either two feet of DNREC-approved clean fill, or an impervious surface to minimize exposure to site surface soils.

During redevelopment of the site, the impacted soil in the immediate vicinity of the contaminated area was excavated to approximately two feet below ground surface and properly disposed of.

The site also has a Long Term Stewardship Plan, which includes vapor intrusion monitoring, groundwater sampling and annual inspections of the cap.

For more information on DNREC's Brownfields Development Program, please visit:

<http://www.dnrec.delaware.gov/whs/awm/SIRB/Pages/Brownfields.aspx>



***An attendee at the ribbon cutting ceremony relaxes on one of the new stoops.***

*Photos by R. Newsome  
Article by M. Price, SIRS and C. Wirtz, WHS*



***Additional Mill Stone Townhomes are currently being constructed on the remainder of the site along Vandever Ave.***

## Dioxins in My Backyard?

**Did you know that the largest remaining source of dioxin emissions is backyard burning of household trash?** Dioxins are toxic chemicals that naturally exist in the environment and can be released into the environment through forest fires, backyard burning of trash, certain industrial activities, and residue from past commercial burning of waste.

In February, the U.S. Environmental Protection Agency (EPA) finalized its non-cancer science assessment for dioxins, which was last reviewed in the 1980s. The EPA findings indicated that most Americans have low-level exposure to dioxins. The assessment also showed that in general, current exposure to dioxins does not pose a significant health risk over a person's lifetime.

Non-cancer effects of exposure to large amounts of dioxin include chloracne, developmental and reproductive effects, damage to the immune system, interference with hormones, skin rashes, skin discoloration,

excessive body hair, and possibly mild liver damage. Over the past two decades, EPA has worked to reduce emissions from all of the major industrial sources of dioxins. As a result of the efforts by EPA, state governments and industry, known and measurable air emissions of dioxins in the United States have been reduced by 90 percent from 1987 levels.

EPA has identified many known sources of dioxins. Working with other federal partners, such as the U.S. Department of Health and Human Services and the U.S. Department of Agriculture, EPA has taken steps to address dioxin. This includes supporting research on dioxin exposure and effects; assessing dioxin human health risks; measuring dioxin levels in the environment, our diet and in our bodies; and reducing exposure to dioxin.

In Delaware, open burning is prohibited as a means of disposal for any refuse or garbage, including but not limited to old lumber, trash, and grass. Burning of leaves is also banned year-round. However, burning of limited amounts of cut or fallen branches, limbs or shrubbery trimmed from a residence is allowed throughout the state from October through April, except when the State Fire Marshal issues a ban on all outdoor burning. Statewide open burning restrictions are in effect throughout Delaware from May 1-Sept 30, during Delaware's ozone season.

For more information on the open burning restrictions, please visit:

<http://www.awm.delaware.gov/Info/Pages/OpenBurningMain.aspx>.

For more information on the new dioxin assessment, please visit EPA's dioxin webpage: <http://www.epa.gov/dioxin/>.



N. Bixby, DNREC ECU

**Trash-burning releases dioxins and is prohibited in Delaware.**

*From USEPA press release 2/17/12  
and G. Moody, DAQ*

## Holy Toledo, Batman, Ozone Season Strikes Again!



The Air Quality Partnership of Delaware (AQP) celebrated Earth Day in heroic style last April 21, when it held its annual Ozone Season Kick-Off event at the DuPont Environmental Education Center in Wilmington.

The AQP of Delaware collaborated with the Delaware Nature Society and the DuPont Environmental Education Center for the event.

Even the most famous, caped crusader, Batman, stopped by to participate in a children's skit and story time. Batman helped the Partnership present information about the importance of understanding air quality and the steps people can take to fight air pollution.

The Air Quality Partnership is a group of citizens, public agencies, and private corporations concerned about the region's air quality. Its mission is to raise awareness and inform Delawareans about practices that improve air quality and citizen health.

The Air Quality Partnership is comprised of Bayshore Ford, Chesapeake Utilities, the Clean Air Council, Delmarva Broadcasting, the Delaware Department of Natural Resources and Environmental Control, the Dover/Kent County Metropolitan Planning Organization (MPO), DART First State, the Delaware Division of Public Health, RideShare Delaware,

and the Wilmington Area Planning Council (WILMAPCO).

On days when air quality is poor (action days), a free service called Enviroflash sends e-mail alerts for people to take measures that improve air quality. These measures include trip chaining (combining errands into one trip), taking mass transit, sharing a ride or carpooling, riding a bike, walking, not topping off the gas tank, and refueling when it's cooler in the morning or evening.



**Batman (aka, Mark VanderHaar-Delmarva Broadcasting Company) and Terri Brixen (DNREC-DAQ) read an air quality-related story to the children at the festival.**

**K. Layton, Dover/Kent County MPO**

For more information about the Air Quality Partnership of Delaware's Ozone Season Kickoff Event or to sign up for Enviroflash e-mail alerts, please visit: [www.wilmapco.org/aqp](http://www.wilmapco.org/aqp).

For more information about air quality in Delaware, please visit DNREC's Division of Air Quality's (DAQ's) web site:

<http://www.dnrec.delaware.gov/whs/awm/AQM/Pages/AirQuality.aspx>.

*AQP press release 4/16/12, T. Brixen, DAQ and C. Wirtz, WHS*

DELAWARE  
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NATURAL  
RESOURCES AND  
ENVIRONMENTAL  
CONTROL

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**The Division of Waste and Hazardous Substances** plans for and responds to, environmental incidents; regulates the handling, transfer, storage and disposal of solid, infectious and hazardous waste; manages the recycling program in Delaware; regulates above and underground storage tanks and boilers; oversees the remediation of sites that have been contaminated by hazardous substances and chemicals; and implements Delaware's Brownfields Development Program.

**The Division of Air Quality** handles the majority of air issues in Delaware including: monitors and regulates all emissions to the air; issues "permits to construct" and "permits to operate" to air contaminant sources; maintains emission inventories from business and industry; develops the State Implementation Plan as required by the Clean Air Act; adopts new regulations and enforces existing regulations and permits; and inspects asbestos removal sites.

**The Division of Water** manages and protects water resources through various programs by providing technical assistance, laboratory services, regulatory guidance and implementation, and educational services; and performing applied research.

## EASY REFERENCE PHONE NUMBERS

### 24-hr. Environmental Report and Spill Notification Line - 1-800-662-8802

Aboveground Storage Tanks - 302-395-2500

Asbestos—New Castle - 302-323-4542

Asbestos—Kent & Sussex - 302-739-9402

Biosolids Permits - 302-739-9946

Boiler Safety - 302-744-2735

Brownfields - 302-395-2600

Delaware Estuary Program - 302-739-9949

Div. of Air Quality, Dover Office - 302-739-9402

Div. of Air Quality, New Castle Office - 302-323-4542

Div. of Waste and Hazardous Substances, Dover Office - 302-739-9400

Div. of Water, Dover Office - 302-739-9950

Dock/Dredging/Bulkheads/Rip-Rap/Wetlands & Subaq. Lands - 302-739-9943

Emergency Prevention and Response - 302-739-9404

Environmental Crimes Unit - 302-739-9401 or 1-800-662-8802

Hazardous Waste - 302-739-9403

Loans & Grants for Wastewater and Septics (FAB) - 302-739-9941

Medical Waste - 302-739-9403

Non-Hazardous Liquid Waste Transporters - 302-739-9948

On-site Wastewater Licensing Program - 302-739-9948

Open Burning - 302-739-9402

Outreach Ombudsman - 302-395-2515

Recycling - 302-739-9403

Septic System Permits - Large Systems Statewide - 302-739-9948

Septic System Permits - Small Systems for Kent & NCC - 302-739-9947

Septic System Permits - Small Systems for Sussex Co. & Holding Tank

Compliance Program - 302-856-4561

Site Investigation & Restoration Section (Superfund & Brownfields) - 302-395-2600

Solid Waste - 302-739-9403

Source Water Protection - 302-739-9945

Stormwater Permits - 302-739-9946

Surface Water Discharge Permits (NPDES) - 302-739-9946

Underground Injection Control & Spray Irrigation - 302-739-9948

Underground Storage Tanks - 302-395-2500

Wastewater Collection, Conveyance and/or Treatment Facility Construction Permits - 302-739-9946

Wastewater Treatment Facility Operators - 302-739-9946

Water Allocation Permits - 302-739-9945

Water Testing - Drinking Water (Div. of Public Health) - 302-741-8630

Well Driller's License - 302-739-9944

Well Permits & Licensing - 302-739-9944