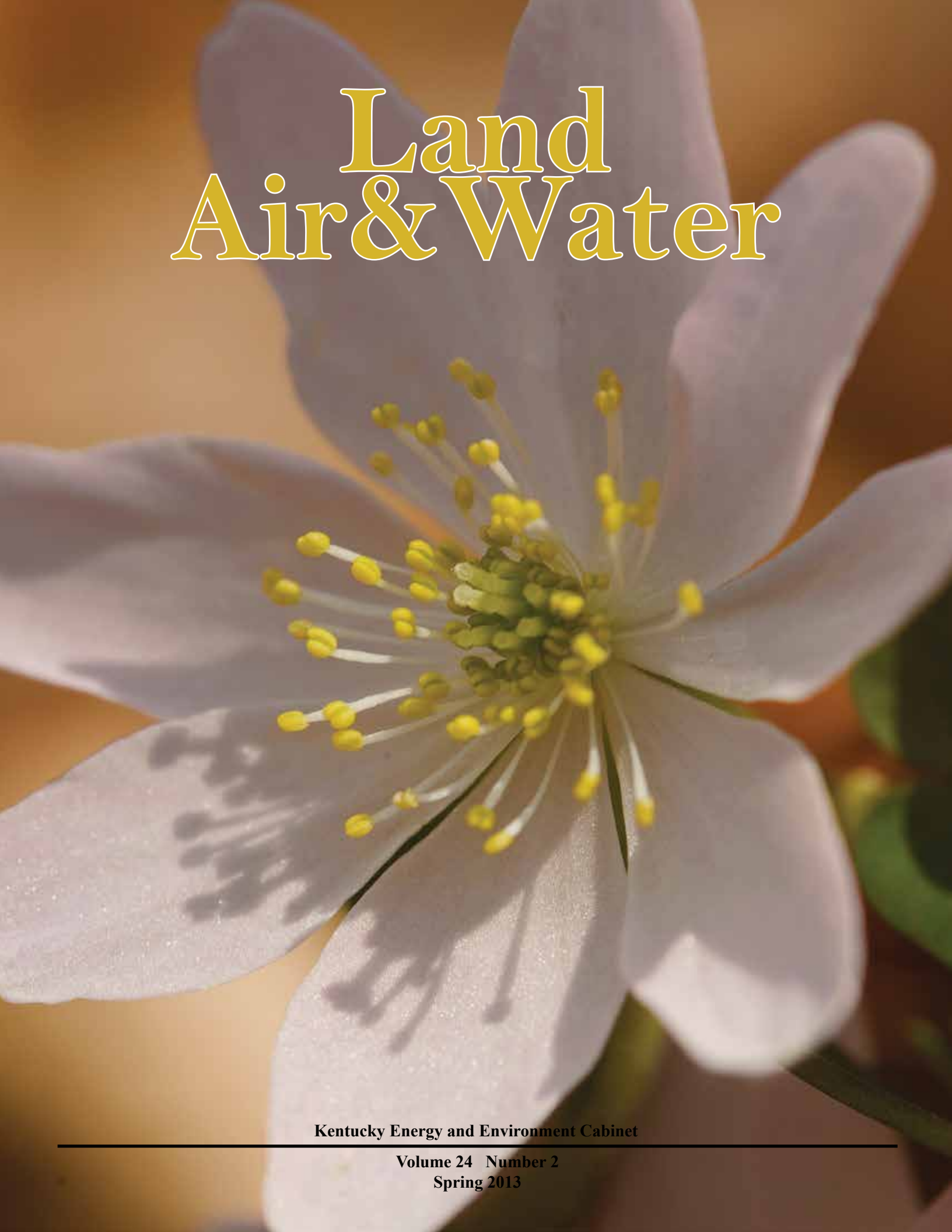

Land Air & Water

Kentucky Energy and Environment Cabinet

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Spring 2013

Land Air&Water

since 1988

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From the Secretary's Desk

The cabinet's mission is probably mostly associated with its regulatory functions. We issue permits, conduct inspections, and sometimes have to take enforcement actions, or even issue penalties to violators. These are all components of our role to protect the environment and the health of our state's citizens.

I think what often gets overlooked are the nonregulatory ways we fulfill our mission to protect human health and the environment. In looking at many of the stories in this issue of the magazine, I was reminded of the significant impact cabinet employees have on the well-being of Kentuckians through a broad array of partnerships, outreach, training and other diverse initiatives.

One of these initiatives is a unique approach to helping local governments address escalating energy costs in their government facilities (see the story on Page 3). While Energy Savings Performance Contracts are not unique, the ability for local governments to avail themselves to this type of energy-efficiency retrofit tool has been met with a host of technical, legal and financial obstacles. Strong partnership and collaboration among many entities is clearly the foundation of this program.

The cabinet's Brownfields Program is probably the epitome of a nonregulatory environmental protection tool available to help communities address problems associated with properties that have been abandoned, either because of real or perceived contamination. In addition to the obvious environmental benefits, cleaning up these sites provides significant local economic development opportunities, as well. And while a number of successful projects have been completed, thousands of sites throughout the state are candidates for future clean up (read more on Page 6).

Programs and initiatives such as tire amnesty collection events, groundwater protection public outreach, and flood-control planning—all highlighted in this issue of *Land, Air & Water*—foster community involvement in protecting human health and the environment. Engaging communities in such initiatives not only leverages precious resources, local involvement ensures long-term benefits as citizens gain knowledge about important steps they can take to prevent pollution, clean up waste, and make their communities better places to live.

I'd like to close by expressing my appreciation to all the cabinet employees who are involved in emergency response activities. A recent such event is highlighted on Page 5 regarding the Oct. 29, 2012, train derailment in Jefferson County. While this was certainly one of the higher profile events in recent history, the cabinet's Emergency Response Team is on call at all times to ensure situations involving hazardous materials are handled appropriately in a timely manner. I'd like to commend them for their professionalism and dedication.

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Land Air&Water

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DEP photo

Volts give green boost to DEP fleet

By Roberta Burnes
Division for Air Quality

In 2005, in an effort to continue to find ways to reduce costs, the Kentucky Department for Environmental Protection (DEP) purchased two Prius hybrids for its fleet. Hybrid technology was in its infancy, and usage was not widespread.

Eight years later, DEP has taken another efficiency step by adding plug-in hybrid electric vehicles to its fleet. The department acquired four Chevrolet Volts and two charging stations to be used by employees conducting agency business.

The purchases were made possible by partial funding from Kentucky Utilities Co. through a grant program administered by the Kentucky Clean Fuels Coalition (KCFC). Other fleets also receiving electric vehicles include the University of Louisville, Lexington-Fayette Urban County Government, Metro Louisville, and Kentucky Fleet Management.

"This is another important step in improving the overall efficiency of the department's fleet," says DEP Commissioner Bruce Scott. "The funding permits us to add four, highly efficient vehicles to our fleet and reduce our operating costs." As an extra benefit, the Volts are replacing four older, larger and less efficient vehicles.

"What excites us about this initiative is that these are the first electric vehicles in all of these public fleets with the exception of the University of Louisville, which already had several electric vehicles," said KCFC Executive Director Melissa Howell. "It allows us to measure how these vehicles perform versus traditional gasoline vehicles, including operational costs and environmental benefits."

Division for Air Quality (DAQ) Director John Lyons is a fan of anything that reduces ground-level air pollution. "Plug-in hybrid technology is great news for air quality," says Lyons. "When operated solely on battery power, the Volt produces no tailpipe emissions. That's a real benefit when driving in the city where emissions from transportation are often higher." Emissions from transportation also contribute to the formation of smog, a pollutant that causes serious human health effects.

Just how efficient are the new vehicles? The U.S. Environmental Protection Agency (EPA) gives the Volt two ratings, depending on the mode in which it's driven in.

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GREEN FLEETS OF THE BLUEGRASS

The Kentucky Department for Environmental Protection (DEP) joined *Green Fleets of the Bluegrass* shortly after it was created by the Kentucky Clean Fuels Coalition (KCFC) in 2011. The voluntary program is open to any transportation fleet with at least 10 vehicles that wishes to improve environmental performance by reducing petroleum fuel use.

Participating fleets are evaluated on an annual basis in seven criteria: vehicles, fuel, maintenance, operation, partnerships, strategy and transparency. Participating fleet managers complete an online survey once per year to submit quantitative data and descriptions of fleet activities.

The Division for Air Quality (DAQ) championed the *Green Fleets* program from the beginning.

"Air quality and transportation are closely linked together," says DAQ Director John Lyons. "Less fuel use means less air pollution, and that benefits all Kentuckians."

DEP participation in *Green Fleets* supports the governor's Energy Plan, which calls for a 30 percent improvement in the fuel economy of the state vehicle fleet by 2015 and a 50 percent improvement by 2025. A key strategy of the governor's plan is the development of purchasing criteria to increase the overall fuel efficiency of the vehicles in the state fleet.

Since joining the program, DEP has reduced its overall fleet from

Continued on Page 7

The KHLCF protects another 2,000 acres

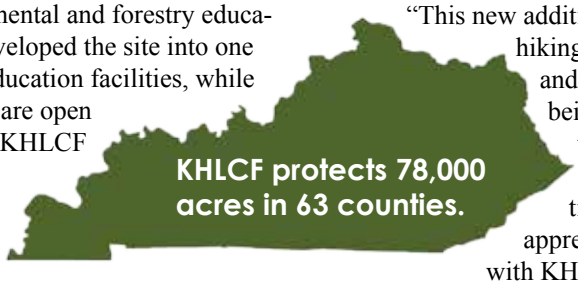
Big Pitman Creek Watershed and Shelby County park preserved through purchase of new tracts; new state nature preserve is created

By Zeb Weese
Kentucky Heritage Land Conservation Fund

Three partners of the Kentucky Heritage Land Conservation Fund (KHLCF) Board have successfully added another 2,000 acres to its inventory of protected lands. These newest land acquisitions, which will soon open to the public, bring the total acres of land protected and conserved in Kentucky to 78,000 in 63 counties.

LEFT: ***Property along Laurel Fork in Whitley County will protect federally listed fish and mussel species, as well as an endemic cave beetle.*** Photo by Greg Abernathy, KNLT. **ABOVE:** ***Ninety-four acres have been added to the Clay Hill Memorial Forest for use in environmental and forestry education and research.*** Photo by Campbellsville University

Campbellsville University recently purchased a 94-acre addition to the Clay Hill Memorial Forest through a KHLCF grant. This purchase, within the Big Pitman Creek Watershed in Taylor County, focused on protecting existing woodlands and seeps as well as reforesting pastures. Clay Hill Memorial Forest was established in 1996 when the descendants of pioneer Henry Sanders transferred stewardship responsibilities of 160 acres to Campbellsville University. This donation included an agreement that the land would be used for environmental and forestry education and research. The university has developed the site into one of the region's premier environmental education facilities, while providing five miles of hiking trails that are open to the public for passive recreation. The KHLCF addition was needed to improve overall ecosystem health and habitat improvement.



"This addition helps to secure the future of our forest by increasing its size to more than 250 acres and by providing significant protection for our nature preserves," said Gordon Weddle, director of Clay Hill Memorial Forest and professor of biology at Campbellsville University. "We are gratified by the support of the Kentucky Heritage Land Conservation Fund. We would not have been able to purchase this property without their support." KHLCF funds were previously used to purchase a nine-acre addition to the forest, known as the Feather Creek Nature Preserve.

In addition to the Clay Hill purchase, the Shelby Trails Park located just outside Simpsonville has increased to nearly 500 acres. While most of park has been developed for equestrian use, the new 80-acre addition funded by KHLCF will be open to the public for hiking, bird watching and educational programs.

At the deed signing, Shelby County Parks Director Clay Cottongim said the Shelbyville/Shelby County Parks and Recreation Board and the Fiscal Court was appreciative of the continued partnership they have with the KHLCF Board in the recent purchase of the Hase property located on Aiken Road.

"This new addition will be utilized for conservation and hiking in the years to come. The Parks Board and Fiscal Court have had the privilege of being a partner with KHLCF in the past with three other pieces of property purchased through this fund for conservation purposes. Shelby County greatly appreciates the cooperation and partnership with KHLCF," said Cottongim.

The KHLCF was interested in the Shelby County site because of the opportunity to protect a natural area in one of the Commonwealth's most rapidly developing regions. Protecting this green space will provide habitat for wildlife and create opportunities for environmental education.

Rare species protection was the focus of another purchase in Whitley County along the Laurel Fork. The newly formed Archer Benge State Nature Preserve is a result of several partners, including the KHLCF, the Kentucky Natural Lands Trust (KNLT), the U.S. Fish and Wildlife Service and the estate of William

Continued to Page 16

ABOVE (left and right) Jessamine County utilized an ESPC to upgrade the electrical panel in the Jessamine County Courthouse (left).
Photos by Kentucky Energy Services Coalition

Local governments to receive assistance through LGERP

By Lona Brewer
Department for Energy Development and Independence

In many Kentucky towns, local government buildings are the centerpiece to a community, providing jobs and services to support local residents. In recent years, escalating energy costs have been eating into city and county budgets, and as a result local governments have been feeling the pinch. Furthermore, the inefficiency of these buildings continues to have a financial impact on government agencies, service organizations, schools, businesses and services provided to taxpayers.

Fortunately, through a U.S. Department of Energy grant, the Local Government Energy Retrofit Program (LGERP) was created to educate local governments about managing their rising energy costs through energy-savings performance contracting (ESPC) and to increase the number of local governments that enter into these contracts.

The Kentucky Department for Energy Development and Independence has partnered with the Department for Local Government (DLG) to offer technical assistance in understanding the legal and procurement aspects of ESPC, which promotes a comprehensive whole-building, whole-infrastructure approach to energy efficiency and conservation retrofits and upgrades that can include energy-consuming infrastructure such as buildings, street lighting and water/wastewater facilities.

"Local government facilities often suffer from deferred maintenance and antiquated infrastructure," said Harry Carver of the Department for Local Government. "This program can help local officials take advantage of energy savings, through guaranteed performance contracts, that address infrastructure needs, saving precious local tax dollars over time."

Here's how ESPC works

A local government hires an energy services company to perform an energy audit on their facilities. The audit provides a list of recommended energy conservation measures that, when implemented, save the city or county on their monthly utility bill. When done properly, the money saved by decreased energy use and maintenance costs will, over time, become sufficient to cover the costs of the energy-saving improvements. There is no funding available through LGERP to pay for actual energy improvements.

Currently, more than $700 million in ESPC projects have been executed by the Commonwealth of Kentucky, Fort Knox and some universities, large municipalities, such as Louisville and Covington, and school districts across the state.

LGERP will partner with existing organizations, including the Kentucky League of Cities, the Kentucky Association of Counties, area development districts, and DLG to leverage existing bond pools, communications and training networks, and peer-to-peer exchanges to accomplish the tasks of this project. Through LGERP, local governments will be able to better understand performance contracting and investigate whether an ESPC would be a good fit for their communities.

LGERP will provide a three-pronged approach to help local governments work through understanding and evaluating ESPCs:

- Education and outreach—educating local officials on the value of energy efficiency, the cost in delaying retrofits, and the services/value of performance contracting.
- Technical assistance—providing sufficient information to increase understanding of the ESPC process, including engineering oversight of the audit, contract documentation, and measurement and verification processes.
- Legal assistance—developing standardized contract templates, guiding cities and counties through the statutorily defined procurement process, reviewing contracts, and assisting with the contractor selection process will help local governments as they navigate the complexities of ESPC contracting.

Later this year, local government representatives will have an opportunity to hear more about ESPCs through a series of workshops that will provide information on how other communities have used ESPCs, the outcomes in those communities, and where they can get more information on the process. For more information, email Harry.Carver@ky.gov or call 502-573-2382.

KEENELAND: an environmental winner

Article and photographs by Mary Jo Harrod
Division of Compliance Assistance

Founded in 1935 on a farm near Lexington, Keeneland, a partner-level member of KY EXCEL, is a 1,038-acre complex that includes a thoroughbred horseracing facility and the world's largest sales company for horses. The facility has year-round training facilities and includes a race course, sales pavilion, 57 barns to accommodate 1,951 horses, multiple dining rooms and corporate boxes, and Keene Mansion, the clubhouse.

Venues the size of Keeneland attract crowds, requiring large amounts of resources and generating substantial quantities of waste. So, it made sense that one of the facility's KY EXCEL projects would be to cut utility usage and waste.

Keeneland began a recycling program in 2009 to collect aluminum, cardboard, paper and glass. Old garbage cans were turned into recycling bins and placed around the property. Twice a year, 20 tons of cardboard and 20 tons of paper are recycled. Each year, 10 tons of glass are kept out of the landfill, and biodegradable coffee cups are used at the race course that eventually break down in the landfill. In addition, old tires are managed responsibly by converting them to fuel in an off-site location; used vegetable oil and grease from track kitchens are recycled; and pallets are sold to a Kentucky-based company for reuse and recycling.

Keeneland estimates that it recycles 18,000 tons of waste annually. When recyclables are ready for the market, staff check for the best prices to maximize their revenues, a best practice for any recycling program.

These projects have achieved impressive results, earning Keeneland $15,000 from recycling in 2011. Keeneland reduced the amount of garbage created by 30 percent and cut expenses by 50 percent. In a year and a half, the cardboard baler that was purchased had paid for itself through these reductions.

Keeneland's recycling program is successful due to the strategic placement of the recycling containers, which encourages the public to do the right thing.

Besides waste reduction, Keeneland employs utility bill analysis to monitor eletricity usage and rates. Rather than just pay utility bills as they arrive, staff check them for accuracy and correct rates and have an idea of normal usages.

"Meters are mechanical devices that can go bad and record incorrect usage numbers," says Keeneland Projects Administrator John Howard. "Don't hesitate to ask your utility company representative to explain your bill and make recommendations on ways to save energy and money."

Other projects included replacing lightbulbs with more energy-efficient models, installing motion sensors on some lights and adding a geothermal system to a 4,000-square-foot building.

Keeneland continues to look for inventive ways to be sustainable, such as converting horse bedding into pellets as a fuel source to produce energy. Currently, horse bedding is being sent to a company that composts and uses it to grow mushrooms.

Keeneland is an industry leader in the world of horse racing and an environmental leader for Kentucky.

ABOVE: ***Recycling bins at Keeneland and horse muck that has been converted into pellets.***

New KY EXCEL Members

By joining KY EXCEL, Kentucky's voluntary environmental leadership program, these new members have committed to a variety of projects that go beyond environmental regulations to improve and protect Kentucky's environment. Call 1-800-926-8111 for more information or visit http://dca.ky.gov/kyexcel/.

Advocate
- Eastern Kentucky PRIDE—Somerset
- Greenberg Family—Louisville
- Kentucky Department for Environmental Protection—Frankfort
- Kentucky Environmental Education Council—Frankfort
- Servpro of Versailles, Nicholasville and Danville—Nicholasville
- Robert J. Soffel—Richmond
- Brad Barnett—Richmond
- Denise Anderson—Bowling Green

Leader
- General Electric Appliance Park—Louisville
- Jim Beam Brands Old Grand-Dad Plant—Frankfort
- Smithfield Packing—Middlesboro

Partner
- Alcan Primary Products Corp.—Robards
- Arch Coal Inc.—Kite
- Central Motor Wheel of America—Paris
- CertiCell LLC—Louisville
- National Office Furniture—Fordsville

Master
- Louisville Gas & Electric Co., Cane Run Generating Station—Louisville
- Kentucky Utilities Co., Haefling Generating Station—Lexington

Emergency response

KDEP takes the lead on train derailment

By Kevin Strohmeier
Department for Environmental Protection

Early in the morning on Oct. 29, 2012, along a peaceful stretch of railroad on the Ohio River near West Point in Jefferson County, 13 cars carrying common industrial chemicals and products left the tracks around 6 a.m. This small, but significant, train derailment impacted the local community for more than two weeks as a result of evacuations of nearby homes and the closure of a major commuter highway.

All of this was due to the contents of several of the cars, which had materials that were considered hazardous for ignitability, corrosivity or toxicity. One such material, 25,000 gallons of 1,3-butadiene that is used in the manufacturing of rubber, was released through a hole that occurred in the car during the initial incident. Residual chemicals in the car caused an explosion that injured three workers and threatened the safety of the other damaged rail cars. The biggest concern for safety of the workers and the surrounding community was two cars loaded with hydrogen fluoride that could also leak during salvage operations.

Who plays a role in emergency response?

The Kentucky Department for Environmental Protection (KDEP) is the lead agency when incidents of this magnitude involve hazardous materials.

"Our primary goal in a situation like this is to make sure that lives are safe, both for all the responders and for the surrounding community," said Robert Francis, manager for the Environmental Response Branch. "Once that goal is accomplished, we can start assessing the damage and begin the remedial process."

Federal guidelines also require local government be involved whenever possible. For the West Point derailment, local government agencies from three counties worked alongside state and federal governments, railroad experts and their consultants and contractors, and local industry using a management structure called Incident Command System (ICS). All levels of government and responders, from volunteer fire departments to federal agencies, are trained extensively in ICS so that when emergencies happen, everyone knows their roles and can move quickly into them.

"Continuous training helps to keep our team better prepared for situations we may encounter," said Ashley Bowen, Environmental Response team member. "We only hope we never get to use our training."

At the derailment site, KDEP and other responding agencies that had air monitoring capabilities deployed their equipment to make sure that the surrounding community was not being exposed to potentially dangerous chemical vapors. KDEP worked with the U.S. Environmental Protection Agency to collect and compile the data from the separate groups into a single database. Findings concluded that, except for the initial release of butadiene, there were no measurable amounts of any chemicals detected in the surrounding community. However, the agencies still had to determine where the butadiene went. Computer modeling using weather conditions at the time of the release and

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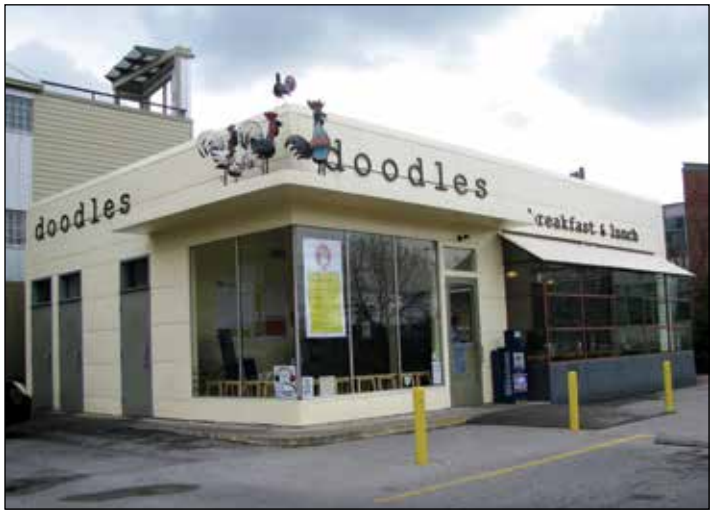
LEFT: ***Two firefighters on the scene of the derailment assess the situation.*** **RIGHT:** ***DEP Environmental Response Team personnel (left to right) Ashley Bowen, Division for Air Quality Ashland Regional Office inspector; Robert Francis, Division for Environmental Program Support (DEPS), Environmental Response Branch (ERB) manager; David Leo, DEPS, ERB call coordinator; Larry Tichenor, Division of Waste Management (DWM) Madisonville Regional Office supervisor; James "Buck" McCloud, DWM London Regional Office supervisor.*** Photos submitted



Adaptive reuse

Article and photographs by Mary Jo Harrod
Division of Compliance Assistance

Brownfield MOA will support and strengthen cleanup efforts

State and federal agencies have signed a Memorandum of Agreement (MOA) that will continue efforts to give new life to brownfield properties in the Commonwealth. Brownfields are often old industrial buildings that are abandoned because of real or perceived environmental contamination.

Success of these revitalization projects is evident at the corner of 3rd and Limestone in Lexington. Doodle's Breakfast and Lunch, which is located on the site of an old gas station, is a popular eatery that exemplifies how a community can use savvy innovation and stylish adaptation and turn an eyesore into a productive business, creating jobs and boosting the local economy.

Other successful brownfield redevelopment projects include the Sag Hollow Golf Club in Booneville that was built on the site of an old strip mine. It now brings beauty, income and recreation to the citizens of Owsley County. West Sixth Brewing Co., along with a roller derby practice area and some small businesses, occupies a former bakery in downtown Lexington. Waterfront Park in Louisville is an award-winning area on the Ohio River that hosts concerts, Thunder Over Louisville and other major community events.

These successes began with vision, planning and coordination with the Kentucky Department for Environmental Protection (DEP) and the U.S. Environmental Protection Agency (EPA). To continue to revitalize an estimated 8,000 brownfields in the Commonwealth, this MOA supports and strengthens efforts to achieve cleanups that are protective of human health and the environment through the appropriate use of the Kentucky Voluntary Remediation Program. This agreement to plan and coordinate cleanup efforts of contaminated properties demonstrates the concern and determination of the EPA and DEP to be environmental leaders. It also clarifies each agency's role and adds a degree of liability protection for developers whose cleanups are approved through the state voluntary cleanup program.

Kentucky is the 25th state nationally and the second Region 4 state (of an eight-state area in the southeastern U.S.) after Florida, to have a voluntary cleanup program agreement with the EPA. This agreement will help Kentucky transform its brownfields into productive properties, enhancing the areas and continuing its outreach and training to the Commonwealth's communities. Through the efforts of the Kentucky Brownfield Redevelopment Program, more than $8 million has been awarded by the EPA to cities and towns in Kentucky for assessment and cleanup of brownfield properties since 2006. Later this year, the program will launch a new revolving loan and grant program to encourage cleanups statewide (see *Brownfield program receives $850,000 RLF grant* on Page 8).

To learn more about the successes of the Kentucky Brownfield Redevelopment Program, read a variety of case studies at http://dca.ky.gov/Pages/ResourceDocuments.aspx (select "Program: Green Resources"). For more information about this historic MOA, visit http://www.epa.gov/swerosps/bf/state_tribal/moa_mou.htm.

ABOVE and RIGHT: ***Doodle's Breakfast and Lunch occupies a former gas station in Lexington.***

Volts give green boost to DEP fleet

Continued from Page 1

When running purely on electricity, the Volt carries a rating of 93 mpg "equivalent," which takes into account the energy required to fully charge the battery and the driving range on a full charge. A fully charged battery allows the Volt to drive 35 electric-only miles before the gasoline engine kicks in to assist.

As battery power goes down, the Volt switches to "charge-sustaining" mode, using a gasoline engine to power a generator to keep the battery charged. EPA rates the Volt at a combined city/highway 37 mpg in this mode, capable of driving an additional 344 miles on one tank of gas.

"The real savings happen when these vehicles are driven on short trips and using battery power alone," says Jeremy Slucher, who coordinates DEP's motor pool and tracks vehicle usage. "Electricity is cheaper than gasoline. By using the Volts primarily for short-range travel and charging them daily, we'll be able to realize the maximum benefit from this type of vehicle."

For example, let's say the Volt is driven only 35 miles a day and recharged daily. The battery draws a maximum of 14 kilowatt hours (kwh) to fully recharge. DEP currently pays around 7.2 cents/kwh for electricity, which amounts to about $1 a day to operate the Volt in electric-only mode. That's 3.5 cents per mile.

Compare that to a traditional, gasoline-powered vehicle that gets a combined 35 mpg. If a gallon of gas costs $3.75, the cost per mile would be 10.7 cents.

Ultimately, the annual savings will depend on how each Volt is driven. As with any vehicle, rapid acceleration, sudden braking and driving at speeds over 55 mph can decrease engine efficiency.

"The Volt's onboard system allows us to analyze how the vehicles are driven and shows us where we can improve," says Slucher.

Lyons expects the Volts to get plenty of use, especially for air quality education and outreach programs. "The department is leading the way to a greener fleet," says Lyons. "As the technology continues to improve and become more widely available, Kentucky will reap the rewards with cleaner air."

Each Chevy Volt is plugged into a charging station outside the offices of the Department for Environmental Protection. A fully charged battery allows the Volt to drive 35 electric-only miles before the gasoline engine kicks in to assist. DEP photos

Green Fleets of the Bluegrass

Continued from Page 1

269 to 249 vehicles, while adding more hybrid and hybrid-electric vehicles to increase overall fleet efficiency. Older, less efficient models are gradually being replaced by newer, more efficient models. Overall fleet efficiency has risen from 15 mpg to 17.5 mpg in just 15 months.

Fleets demonstrating exceptional results are recognized with a *Green Fleets of the Bluegrass* annual award. Examples of exceptional results include substantial fuel reductions, leadership on advanced vehicle and alternative fuel infrastructure development, or best-in-class programs for fleet size or sector. Last December, DEP was recognized for its efforts to improve fleet performance with an award for significant achievement across all seven *Green Fleets* criteria.

For more information about *Green Fleets of the Bluegrass*, visit http://www.kentuckycleanfuels.org/greenfleets.htm.

Brownfield program receives $850,000 revolving loan fund grant

By Mary Jo Harrod
Division of Compliance Assistance

Driving around any of Kentucky's 120 counties, you are bound to notice abandoned properties or buildings. Whether it is an old industrial factory, a gas station, hospital or school, cities and counties are in a constant struggle to find new uses for old structures. These properties, often classified as brownfields, are hard to market due to liability issues and potential cleanup costs associated with real or perceived contamination, but in reality, they can provide hidden benefits to a new developer or business looking to relocate. Many brownfields, once remediated, offer reduced utility costs and can reduce upfront construction costs with existing infrastructure.

Often, these projects need a kick start to get underway. In order to help developers and local governments receive the technical guidance and financial incentives they need to complete faster brownfield cleanup and redevelopment, the U.S. Environmental Protection Agency (EPA) has provided Kentucky with an $850,000 Revolving Loan Fund (RLF) grant. The grant gives direct financing to the Kentucky Brownfield Redevelopment Program, which provides grant writing assistance and targeted brownfield assessments. The EPA estimates that there are an estimated 8,000 abandoned and contaminated waste sites in Kentucky.

"This grant provides additional resources for the Kentucky Brownfield Redevelopment Program to use to assist businesses, local governments and nonprofits to clean up blighted properties and put them back into productive reuse," said Herb Petitjean, brownfield coordinator.

As a result of this grant, the Kentucky Department for Environmental Protection provides low-interest loans and subgrants for cleanup activities on brownfield sites in communities across Kentucky. When loans are repaid, the loan amount is returned to the fund and loaned to other borrowers, providing an ongoing source of capital for redevelopment within the state. This follows on the heels of another significant event for the brownfield program—the signing of a Memorandum of Agreement between Kentucky and the EPA that supports and strengthens efforts to achieve brownfield cleanups through the appropriate use of the Kentucky Voluntary Remediation Program (read *Adaptive reuse* on Page 6).

For communities around the Commonwealth, this RLF grant will provide hope and much-needed funding to clean up eyesores that invite vandalism, improve property values and create useful sites for their citizens to live, work and play. Communities are encouraged to begin identifying properties in preparation for a request for proposal in the fall. If the loan program is successful, the Brownfield Redevelopment Program will apply for additional EPA funding, as well as establish baseline data for future funding requests. For more information, call 800-926-8111 or visit http://dca.ky.gov. For examples of brownfield success stories, click on "green resources" at http://dca.ky.gov/Pages/ResourceDocuments.aspx.

Emergency response

Continued from Page 5

information on the topography of the area determined that the chemical entered the Salt River valley and traveled into an uninhabited area of the Fort Knox military reservation where it would break down in the presence of sunlight. According to the model, concentrations of the chemical were never at a level that could be considered acutely dangerous outside of the immediate area of the release. In addition, KDEP collected samples from wells in the surrounding area and did not detect any of the chemicals from the derailed cars in groundwater samples.

What happens now?

"It will be necessary to monitor the site for an extended time to ensure that it will be safe for the surrounding residents and the environment," notes Tim Hubbard, assistant director for the Division of Waste Management (DWM).

Butadiene is a gas at atmospheric pressure and normal temperatures but shipped as a liquid under elevated pressure. Since the chemical is present in the soil where the incident occurred, it likely formed a pool on the ground after the derailment before it changed back to a gas.

DWM's Superfund Branch is currently working with the railroad to define the extent of the soil contamination and how best to manage it. There is a trade-off, however, between removing the contaminant and causing even greater environmental damage in that process. KDEP will work to ensure no harm comes to the community when the cleanup phase begins.

DCA launches air quality reporting video series

The Kentucky Division of Compliance Assistance (DCA) has launched three videos focused on air quality permit reporting. These self-paced videos are approximately 15 minutes each and provide a basic overview of the processes and how to comply with the reporting conditions in a permit.

The videos are the first of many planned for 2013 that will cover a wide array of multimedia topics. DCA hopes to develop a video library that regulated entities can access on demand. The videos can be viewed at:

- http://www.youtube.com/watch?v=FDv_TSKIWc8
- http://www.youtube.com/watch?v=Ei06d-Vbcgg
- http://www.youtube.com/watch?v=Xp3gbhEMQC0

DOW helping communities reduce flood damage

Articles by Allison Fleck
Division of Water

Flooding is a natural phenomenon. Rivers and streams do overflow their banks. Under natural conditions, floods do not cause damage; the damage occurs when structures are built in flood–prone areas. In terms of economic disruption, property damage and loss of life, floods are nature's No. 1 disaster.

"Increasing development in floodplains, open spaces and wetlands have diminished the capability of the land to soak up rain," said Jory Becker, manager of the Division of Water (DOW) Surface Water Permits Branch. "Areas that were once effective sponges storing precipitation are now being replaced by buildings and pavement that leave the land increasingly impervious. As a result, floods have become larger and more frequent."

Traditionally, flood-control planning has focused on protecting areas by using dams, levees or diversions and on providing emergency relief and disaster recovery for flood victims. In recent years, these "Band-Aid" approaches to flooding problems have been superseded by a more comprehensive approach that includes managing what occurs in the floodplain itself.

The DOW is using this model to reduce the hazards of flooding. Kentucky law requires prior approval from the DOW for the construction, improvement or reconstruction of any structure, deposition of material or other construction across or along any stream within the state. Certain activities that require a stream construction permit are dams, bridges, culverts, residential and commercial buildings, placement of fill, stream alterations or relocations, small impoundments, and water and wastewater treatment plants.

Other DOW programs reduce flooding potentials by protecting established wetlands and promoting the development of new ones, encouraging the planting of vegetative growth along waterways, strengthening local storm water control ordinances and removing flood-prone structures from floodways.

While most of these efforts are long term, the DOW is working in the short term by encouraging communities with flood-prone areas to participate in the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA).

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What is a 100-year flood?

Disaster experts classify floods according to their likelihood of occurring in a given time period. A 100-year flood, for example, is an extremely large, destructive event that would theoretically be expected to happen only once every century. In reality, this classification means there is a 1-percent chance that such a flood could happen in any given year. Over recent decades, possibly due to global climate change, 100-year floods have been occurring worldwide with greater regularity.

TOP: ***Flooding in Madison County in May 2010 reduced this roadway to warped sheets of asphalt.*** **INSET:** ***Roaring waters along Harless Creek in Pike County destroyed this residence during a July 2010 flood.*** **OPPOSITE LEFT:** ***A pile of debris is all that remains of this home after flooding in Pike County in May 2010.***
Photos provided by DOW

Of the 120 counties in the Commonwealth, all but seven participate in NFIP. To see a current list of participating communities in Kentucky, visit http://www.fema.gov/cis/KY.html

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National Flood Insurance Program

The NFIP is a voluntary program based on a mutual agreement between the federal government and the local community—if a community adopts and enforces a floodplain management ordinance to reduce future flood risk, the federal government makes NFIP flood insurance available to local homeowners, business owners and renters as a financial protection against flood losses.

"Many people are under the mistaken impression that their homeowner's insurance policies cover flood damage," said Todd Powers, supervisor of DOW's Floodplain Management Section. "Others believe that the federal government will step in with disaster assistance following a flood. In actuality, federal assistance is made available only if the president of the United States declares the event a federal disaster and even then the assistance is often in the form of a loan, which must be repaid in full with interest."

With an NFIP policy, subscribers can be reimbursed for all covered losses, even if the president does not declare a

Continued on Page 12

Raising awareness of flood dangers

A steady rain provided a fitting background as Deron Rambo welcomed visitors to Frankfort's Paul Sawyier Library for the December unveiling of one of 14 signs that identify high-water marks throughout the city of Frankfort. In addition to commemorating the flood level at that location, the signs include information about how to access local flood information and flood safety tips and recommendations.

The "Be Aware: Know Your Line" program, which is being sponsored by the Federal Emergency Management Agency (FEMA) as part of the National Flood Insurance Program (NFIP), is the first of its kind in the nation. It is designed to commemorate the community's flooding history and raise public awareness of the probability and dangers of flooding.

"Now, this is a good rain," observed Rambo, director of the Frankfort/Franklin County Office of Emergency Management and Homeland Security. "It's slow and steady and spread out over several days. It's when it comes hard and fast over a short period of time that we're more likely to see the Kentucky River overflow its banks. The time to prepare for these flood events is before they occur."

Rambo emphasized the importance of the protections provided by NFIP, of which Frankfort and Franklin County are members. In Kentucky, the program is coordinated through the Kentucky Division of Water (DOW).

"Federal flood insurance through the NFIP is designed to provide an alternative to disaster assistance and disaster loans," said Jory Becker, manager of the DOW's Surface Water Permits Branch. "It is intended to reduce future flood damage through local floodplain management ordinances and to have people who live at risk help pay for their recovery through an insurance mechanism. Another important objective is to break the cycle of flood damage by encouraging communities to guide development to lower-risk areas and by imposing construction elevation requirements."

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A local resident (right) looks on as city of Frankfort employees Larry Raglin (left) and Freddie White (center) erect a high-water-mark sign at the corner of Fowler and Fourth streets.
Photo courtesy of the city of Frankfort

Richardson named head of Division of Conservation

Cabinet photo

Energy and Environment Cabinet Secretary Len Peters named Kimberly Richardson as the new director of the Division of Conservation (DOC).

Richardson recently served as the DOC's assistant director. She came to DOC as a field representative in 2005 and quickly demonstrated her expertise in issues faced by the agricultural community. After obtaining a bachelor's degree in agriculture in 2001, she worked for the U.S. Department of Agriculture's Farm Service Agency. Richardson currently serves as chairperson for the Kentucky Agriculture Water Quality Authority and president of the Bluegrass Soil and Water Conservation Society.

"Over the years, the division has provided exemplary leadership in natural resource conservation stewardship for the Commonwealth," said Steve Hohmann, commissioner for the Department for Natural Resources. "I have every confidence that Kim will continue this tradition and serve the state and its citizens well.

"Kim's background, her integrity and her passion for conservation and the farming community gives the department the expertise we need to accomplish our mission. She will be a great addition to our team of directors," Hohmann said.

Richardson replaces long-time director Steve Coleman, who retired in December from the division after 37 years of service.

Raising awareness of flood dangers *Continued from Page 10*

Flood Insurance Rate Maps are a good place to start learning more about the potential of experiencing flooding, said Carey Johnson, flood map coordinator for DOW. He is spearheading state efforts to modernize and address gaps in flood hazard data to form a solid foundation for risk assessment, raise public awareness and promote hazard mitigation planning.

"The maps have multiple uses," said Johnson. "They are used by private citizens, insurance agents, engineers, surveyors and brokers to locate properties and buildings and identify their risk to flood damage. Community officials also use them to administor floodplain management regulations and mitigate flood damage. The goal is to deliver quality data that increases public awareness and leads to action—such as we are seeing in this Frankfort sign project—that reduces risk to life and property."

The maps should be available for review at most county courthouses, city halls and local planning and zoning or engineering offices. Copies of the maps may also be obtained from the FEMA Map Service Center.

Johnson said the maps provide a good starting point for understanding the type and severity of possible flooding in specific locales, including flooding in low-risk areas. Here are some actions you can take to mitigate the risk and damage from flooding:

Prepare your house

- Clear debris from gutters and downspouts.
- Move furniture, valuables and documents to a safe place.
- Anchor any fuel tanks.
- Make sure your sump pump is working and install a battery-operated backup. Install a water alarm to warn of water accumulating in basements.
- Consider installing check valves to prevent flood water from backing up into drains.
- Elevate the furnace, water heater and electric panel if you live in a high-risk flood area.
- If feasible, construct barriers to stop floodwater from entering the building and seal walls in basements with waterproofing compounds.

Create a waterproof flood file

- A list and pictures or a video of all major household items and valuables, even those stored in basements, attics or garages. Include serial numbers, receipts for major appliances and electronics and jewelry or art appraisals.
- A copy of your insurance policies with your agent's information.
- Copies of all other critical documents, including financial records.

Frankfort's high-water-mark project is just one step the city and county are taking to draw attention to the importance of preparation. By summer, real-time inundation maps will be available with which "you will be able to drill down to your street to get the inundation forecast," said Rambo. In the meantime, he urged residents to regard the high-water signs as reminders to prepare.

"I hope that when people see these high-water markers, they will spend a minute to consider how a major flood could impact our community," said Rambo. "Whether it's making a plan, making a disaster kit, or even simple things such as putting valuable information in waterproof containers, there are low-cost ways to reduce the amount of destruction floods can cause. You need to prepare yourself and your family now for the day you call 911 and no one answers."

To learn more about disaster preparedness, visit www.frankfortema.org. To learn more about NFIP and state efforts to reduce flood risks, visit http://water.ky.gov/floodplain/Pages/default.aspx.

DOW helping communities reduce flood damage

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disaster. In the past four years, there have been only four federally declared flood disasters in Kentucky, but there have been dozens of flooding events that have triggered numerous claims on NFIP policies.

The NFIP works closely with nearly 90 private insurance companies to offer flood insurance to property owners and renters. Rates are set and do not differ from company to company and agent to agent. These rates depend on many factors, including the date and type of construction as well as the building's risk level and its location on flood maps.

Flood Insurance Rate Maps show the high-risk areas where there is at least a 1 percent annual chance of flooding. Residents who live in these areas are required to purchase flood insurance if they have a mortgage from a federally regulated lender, and they must carry the insurance for the life of the mortgage.

Coverage is also available to residents in low-risk areas, where flood insurance premiums can be a real bargain. According to FloodSmart.gov, the official website of the NFIP, people outside of high-risk areas file more than 20 percent of NFIP claims and receive one-third of the disaster assistance for flooding.

The standard flood insurance policy (available for up to $250,000) covers structural damage, including damage to the furnace, water heater, air conditioner, floor surfaces (carpeting and tile) and debris cleanup. The average cost nationally for an NFIP policy is about $637, according to Eric Vaith, an assistant vice president with the insurance provider USAA. For an additional premium, homeowners may purchase flood coverage for up to $100,000 of damage to personal property.

Risk MAP

FEMA is currently in the process of updating and modernizing the nation's flood maps. The new maps reflect recent changes to floodplains and flood risks, and, in some cases, are changing flood insurance requirements for some property owners.

"Flood hazard maps simply get out of date over time," said Carey Johnson, who is coordinating the map modernization project, called Risk MAP, for the Division of Water. "Some of the maps were 20 and 30 years old and no longer reflected the current environment."

Johnson said the new mapping system enhances the utility and value of flood hazard mapping.

"The new maps have been generated digitally using state-of-the-art analysis methods to define flood risks and are overlain with detailed topographic mapping based on Geographic Information System (GIS) data," said Johnson. "Risk MAP takes a broad, watershed approach, emphasizing the delivery of accurate maps but also working with communities to understand the causes of flooding and helping with mitigation strategies."

Changes in the status of dams or levees, surface erosion, land use and development can all change the size and shape of a floodplain, and hence the manner in which flooding occurs. These conditions, in turn, can alter the risk status of properties in the area.

"Property owners whose buildings have been removed from high-risk zones may be eligible for lower premiums and/or a one-year refund of their insurance premium," said Powers. "Likewise, property owners whose structures are now found to be in high-risk zones will be required to obtain flood insurance if they hold federally-backed mortgages."

Property owners who disagree with the risk designations of the flood maps do have recourse to challenge the assessment through the Letter of Map Amendment, or LOMA, process.

"If a property owner thinks their property has been inadvertently mapped in a high-risk area, they may submit a request to FEMA for a Letter of Map Amendment," said Powers. "If the request is granted, property owners may be eligible for lower flood insurance premiums or the option to not purchase flood insurance."

Those who wish to make an appeal should be aware that FEMA will only accept technical and scientific data, which generally requires the retention of the services of a registered professional civil engineer at the property owner's expense.

For additional information about the NFIP, visit http://www.FloodSmart.gov. To find flood maps in your area, visit the FEMA Map Service Center at http://msc.fema.gov or contact the DOW Floodplain Management Section at 502-564-3410.

Communities enrolled in NFIP adopt flood prevention ordinances, such as requiring elevation of residential structures located in a floodplain. Photo courtesy of Mark Wolfe, FEMA

EPA issues new, tighter standard for fine particle pollution

By Roberta Burnes
Division for Air Quality

If you are one of more than 300,000 Kentuckians who suffer from asthma, chances are you've probably checked the Air Quality Index (AQI) before heading outdoors on a warm summer day. The AQI is a simple, color-coded way to find out about local air quality at a glance.

In January, the U.S. Environmental Protection Agency (EPA) "tweaked" the Air Quality Index after issuing a new, tighter standard for fine particle pollution (also known as $PM_{2.5}$). EPA lowered the annual health-based standard for $PM_{2.5}$ from 15 micrograms per cubic meter (µg/m³) to a limit of 12 µg/m³. The AQI still looks the same, but the threshold for "unhealthy" air quality has been lowered to reflect the new standard.

$PM_{2.5}$ is composed of tiny particles less than 2.5 micrometers in diameter, and includes both solids and liquid droplets. Fine particle pollution can penetrate deep into the lungs and has been linked to a wide range of serious health effects, particularly among children and the elderly. Both short- and long-term exposures to $PM_{2.5}$ have been linked to health problems.

A federal court ruling required EPA to update the standard based on the best available science. Ninety-nine percent of all U.S. counties are projected to meet the standard without any additional action, according to EPA.

How will Kentucky be affected by the new rule? "It all depends on our air monitoring data," said Division for Air Quality (DAQ) Director John Lyons. Counties not meeting the new standard may be designated as "nonattainment" based on a three-year average of air monitoring data of $PM_{2.5}$. The current three-year average (2010-2012, not yet finalized) indicates monitors in Jefferson County are exceeding the standard—but that may change by the time attainment designations are finalized.

"All $PM_{2.5}$ air monitoring data will be quality assured and certified by May 1, 2013," said Lyons. "At that point, we'll have the complete, three-year data set we need in order to recommend any counties for nonattainment."

DAQ has until the end of the year to make those recommendations to EPA. One year later, EPA will then decide which counties to designate as nonattainment. If any counties are designated as nonattainment at that time, stricter permitting and transportation standards will be implemented until the area is back into compliance. Kentucky will have three years to get back into compliance for any area not meeting the standard.

Rebuilding the Morgan County Nursery: a year later

By Jennifer Turner
Division of Forestry

The Division of Forestry's Morgan County Nursery was all but destroyed by the same tornado that hit West Liberty last year on March 2. The 50-acre nursery, located only a few miles west of West Liberty, is one of two seedling nurseries owned by the division. Its other nursery is located in Gilbertsville in western Kentucky.

Most of the buildings, including the main office, rural fire suppression support office, two barns, equipment storage building and a cooler containing more than 400,000 seedlings packaged for shipment were decimated. State and federal vehicles, fire-suppression equipment, a Firewise educational trailer, several tractors, tree lifters, mowers and a refrigerated trailer also full of packaged seedlings were gone in minutes. Despite the debris and flattened trees scattered in the nursery's valley and along the adjacent Licking River, most of the seedlings still in the fields remained intact.

Like much of West Liberty, assessment and cleanup began immediately. The packaged seedlings that could be salvaged were gathered and protected until they could be shipped. Teams of division employees mobilized to the area working long hours to save what they could and clean up the debris left behind. Over several months, the business of growing seedlings continued with limited equipment and resources. In late 2012 a storage building was constructed and today serves as a temporary facility for the packaging and shipping of this year's crop of seedlings.

Packaging seedlings in the new storage building. KDF photo

While the Morgan County Tree Nursery is back open for business, more work needs to be done. More construction is expected later this year with the building of the new facility that will include room for the seedling cooler, storage for large equipment and docking bays for shipping. The tornado may have taken the buildings and its contents, but the division's roots are still firmly planted in West Liberty.

Inspecting an evolving site

State-of-the-art plant designed to destroy chemical agents

By Daniel Walker
Division of Waste Management

Located near Richmond, Ky., the Blue Grass Army Depot (BGAD) stores 2 percent of the nation's original chemical weapons stockpile that includes nerve agents Sarin, VX and mustard agent. A portion of these weapons has been in storage on the depot since the 1940s and needs to be destroyed in a safe, timely manner. The Kentucky Division of Waste Management's Blue Grass Army Depot Section provides oversight to the BGAD, Blue Grass Chemical Activity (BGCA) and the Bluegrass Chemical Agent-Destruction Pilot Plant (BGCAPP) to ensure protection of human health and the environment, ensure safe storage and destruction of the stockpile, and keep stakeholders and the community informed of plant activities.

TOP: ***Construction of the Bluegrass Chemical Agent-Destruction Pilot Plant.*** **LEFT (top to bottom):** ***An employee checks a drum in the less-than-90-day storage area. Two employees check the contents of a large metal cabinet in the less-than-90-day storage area.***
Photos courtesy of the Assembled Chemical Weapons Alternatives Program

Extensive inspections during construction

The BGCAPP is under construction and is designed to safely destroy 523 tons of chemical agent in rockets and artillery projectiles currently stored at the depot. When it becomes operational, there will be many permitted buildings, containers and tanks treating and accumulating hazardous waste that will be subject to state Resource Conservation and Recovery Act (RCRA) regulations.

In the construction phase, there are two primary areas of interest for Kentucky Department for Environmental Protection (KDEP) inspectors—the Hazmart area and the less-than-90-day-storage area. Inspections will become increasingly complex as site activities evolve into facility systemization and ultimately the demilitarization of chemical munitions.

Hazmart

The Hazmart is where construction workers can go to sign out any chemicals required to perform their job, such as solvents for cleaning, paint for marking work areas, and lubricants for tools. The Hazmart contains many of the same items one would find in a home garage or workshop. The difference is household hazardous waste is exempt from RCRA regulations. Everything issued from the Hazmart must be returned so that a RCRA-trained employee can determine if the waste is hazardous or nonhazardous. Once that determination is made, the material is placed in a drum and managed in accordance with state regulation as a hazardous waste, a nonregulated nonhazardous waste, recycled or reused on-site, if possible.

Each drum or container must be in good condition, labeled as hazardous waste, closed (except when adding more waste), be at the point of generation and under the control of an operator at all times. The drums are kept in metal cabinets that are flame proof and capable of containing any potential spills. There are separate cabinets for each category of waste—aerosol disposals, aerosol recycling, universal waste (such as fluorescent lamps and batteries), nonhazardous waste and reuse. When a drum is full, it is labeled with a date and the facility has three days to move it from the Hazmart area to a

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Inspecting an evolving site *Continued from Page 14*

less-than-90-day-storage area. The 90-day clock starts when the date is marked on the drum.

Less-than-90-day-storage area

This area is where waste is held prior to shipment off-site to a treatment, storage or disposal facility. The provisions allowing facilities to store hazardous waste on-site for up to 90 days provides manufacturers with a means to accumulate a sufficient quantity of waste for disposal without burdensome permit requirements. The less-than-90-day-storage area holds the full drums in metal cabinets similar to the Hazmart area, but larger. There is also a large shed that contains supplies for spill control, cleanup, and extra empty drums and containers for the future storage of waste.

The inspection of the BGCAPP site includes checking the Hazmart and the less-than-90-day-storage cabinets to ensure they comply with all applicable regulations. KDEP inspectors also review waste management transactions, including manifests of waste shipped off-site, training records of employees responsible for handling wastes, and the results of internal weekly inspections conducted by the BGCAPP environmental office to ensure consistency and identify any potential issues that need to be fixed or improved.

Additional inspections

KDEP inspectors also investigate unmarked drums to determine if they are empty and look into trash bins for aerosol cans or caulk tubes that workers may have disposed of improperly instead of returning them to the Hazmart. Inspectors then discuss their findings with facility staff and discuss new waste streams and determinations. Once an inspection report is generated and submitted to the appropriate offices, parties can discuss improvements to procedures and work culture to make the job site safer for human health and the environment.

Keeping everyone informed

The public can learn more about the chemical weapons destruction project and offer feedback on the program by visiting the Blue Grass Chemical Stockpile Outreach Office in Richmond. There are displays, models of chemical weapons, and information about the Assembled Chemical Weapons Alternatives program, the Blue Grass Army Depot and environmental laws and compliance. In addition, speakers are available to share information about the BGCAPP with businesses, schools or organizations. To receive the latest news on the project and upcoming public events, sign up for monthly email updates by calling 859-626-8944, emailing bgoutreach@iem.com or visiting the BGCAPP website at https://www.peoacwa.army.mil/bgcapp/index.html.

The Kentucky Division of Waste Management's Blue Grass Army Depot Section provides information on the depot's demilitarization effort through its newletter *Demil Dispatch*. All issues are available at http://waste.ky.gov/HWB/Pages/BluegrassArmyDepotSection.aspx. For more information, contact Daniel Walker at 502-564-6716, ext. 4507 or email Daniel.Walker@ky.gov.

An interior view of the BGCAPP's ventilation system. Photo by the Assembled Chemical Weapons Alternatives Program

Online document guides applicants through KPDES Coal General Permit

The Kentucky Department for Environmental Protection has prepared a document of frequently asked questions (FAQ) with respect to the current KPDES general permit (KYG040000) for wastewater discharges from coal mining operations.

The document is an aid available to the coal mining industry with clear explanations of topics critical for complying with the requirements under the Kentucky Pollutant Discharge Elimination System. Among the topics the FAQ discusses are how to complete Discharge Monitoring Reports (DMRs), coal effluent limits, alternate precipitation effluent limitations, no-discharge events, changes in mining phases, sampling and flow.

The document is available at http://dep-enforcement.ky.gov/Documents/KPDESCoalGPFAQs020113.pdf

For more information, contact the Division of Enforcement Compliance and Operations Branch at 502-564-2150 or the Division of Water Surface Water Permits Branch at 502-564-3410.

New signs target protection of groundwater

By Allison Fleck
Division of Water

New signs are going up across the Commonwealth to help raise awareness of the importance of protecting Kentucky groundwater and surface water drinking water sources. The Division of Water (DOW) is working with the Transportation Cabinet to install new and replace old signs designating water supply protection areas and encouraging citizens to report any spills of potential contaminants in those areas.

The signs were developed and purchased through the Wellhead Protection Program to aid communities with public education efforts in their wellhead protection areas. Currently, the signs are being installed in the watersheds for communities that utilize groundwater for their drinking water source.

"The new signs are larger and easier to read," said Jessica Moore, a geologist with the DOW Groundwater Section. "Unfortunately, they no longer carry a phone number for reporting spills since current regulations prohibit the use of phone numbers of more than four digits on public signage.

"The best way to report a spill, or even a suspected spill, is by dialing 911 or by calling the Kentucky Environmental Response Team (ERT) hotline 24 hours a day, seven days a week at 800-928-2380. The ERT is trained to respond immediately to environmental emergencies."

Moore said the best way to protect drinking water sources is by preventing contamination from both point and nonpoint sources in the first place. Point sources are controlled through DOW's wastewater permitting program and the implementation of groundwater protection plans. Nonpoint sources are more difficult to identify and manage because they have collective effects over broad areas.

Photo courtesy of DOW

Pollution from some nonpoint sources, such as agricultural runoff and on-site septic systems, can be mitigated through alternate land uses, best management practices and installation of municipal sewer systems within the protection area. Moore said DOW works with community water systems to help them develop source-water protection strategies based on public education and regulatory compliance.

"Public education efforts typically include public meetings, brochures, fliers, mailings, consumer confidence reports and posted notices," said Moore. "Successful strategies require the cooperation of plant operators, the utility water board or commission, businesses and residents within the protection area."

Moore said everyone plays a role in protecting drinking water sources. Local governments can pass ordinances about land use within their protection areas, but raising public awareness is the key.

"All communities need to take action and protect their drinking water sources," said Moore. "These signs are one way to begin to raise awareness about the importance of protecting our lakes, rivers, springs and groundwater for future generations. Remember, if it's on the ground, it's in our water."

Learn more about how you can protect your water at http://water.epa.gov/action/protect/ or by calling the Division of Water at 502-564-3410.

The KHLCF protects another 2,000 acres

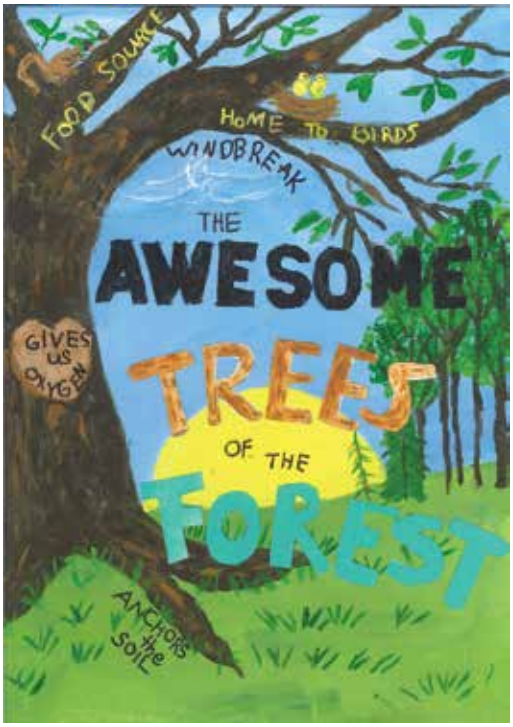
Continued from Page 2

Dennis Benge, that will protect more than 1,800 acres. Benge bequeathed $200,000 to the Kentucky State Nature Preserves Commission because of his love of nature and wildlife; the commission then directed the money towards this purchase.

At least four federally listed species are found on the site—the blackside dace and the Cumberland arrow darter are fish found only in this region, as well as the Cumberland elktoe and Cumberland papershell mussels. According to KNLT Executive Director Hugh Archer, there is at least one endemic cave beetle found here and may be other species unknown to science in the remote area. Habitat for the federally endangered Indiana bat is also found along Pine Mountain and potentially protected by this acquisition.

Laurel Fork is part of the larger Pine Mountain project area; the KHLCF and KNLT have worked with several agencies to protect thousands of acres along Pine Mountain in Whitley, Bell, Harlan, Letcher and Pike counties. Archer Benge is the eighth state nature preserve on Pine Mountain and the 61st state nature preserve dedicated in Kentucky.

The KHLCF is funded in part by the sale of "Nature's Finest" license plates. For more information, visit http://heritageland.ky.gov or contact Zeb Weese at 502-573-3080.



Creativity 'N Conservation

By Johnna McHugh
Division of Conservation

For the past 68 years, Kentucky's teachers have presented conservation lessons in their classrooms in conjunction with the Kentucky Association of Conservation Districts (KACD) and other partners. The students then use what they have learned to create posters and essays to demonstrate their knowledge of the topic.

Last year, more than 63,000 students participated in the Jim Claypool Art and Conservation Writing contests, the largest number since the conservation materials went digital. Students submitted 45,552 art entries from 99 different counties and 17,554 essay entries from 91 counties.

The students' conservation topic was "Kentucky's Forests—Branching Out." An online study guide was available for students and teachers on both the Kentucky Farm Bureau and the Division of Conservation's websites. The Kentucky Association of Conservation District employees made printed copies of the guide available for purchase by each conservation district for distribution at local schools.

All first-grade through 12th-grade students' entries are judged at the county level by conservation district supervisors, Farm Bureau members and county officials. A winner from each county is chosen from each art and writing category. Those masterpieces are then reviewed by a panel of judges with various environmental backgrounds for area and state titles. State, area and county winners receive monetary awards sponsored by the Kentucky Farm Bureau. The local conservation districts may also provide awards to the winners.

The Jim Claypool Art Contest state winners are:
- *First Place:* Grace Adams, Henry County, Eastern Elementary School
- *Second Place:* Adaline Doderer, Johnson County, Paintsville Elementary School
- *Third Place:* Katy Martin, Barren County, North Jackson Elementary School

The Conservation Writing Contest state winners are:
- *First Place:* Daniel Cooper, Spencer County, Spencer County High School
- *Second Place:* Libby Shockley, Hopkins County, James Madison Middle School
- *Third Place:* Sydnie Schell, Campbell County, Highlands High School

These state winners, along with the area winners from each of KACD's nine geographical areas, were recognized recently at the 2013 Biodiversity Day celebration in Frankfort on Feb. 28. In addition to the monetary awards, all area and state winners were given a framed nature print and tote bag from the Kentucky Conservation Committee. The six state winners also received 10 tree seedlings from the Kentucky Division of Forestry.

Photos (left) Grace Adams is the 2012 state winner of the Jim Claypool art contest. She stands with Kentucky Farm Bureau Public Affairs Division Director Jeff Harper. (center) Adams' winning poster. (right) Daniel Cooper is the 2012 state winner of the conservation writing contest. He stands with Kentucky Farm Bureau's Jeff Harper. Photos by David Hargis

Tire Amnesty Program success

By Virginia Lewis
Division of Waste Management

Last fall's Waste Tire Amnesty Program, held in the Bluegrass Area Development District's 17 counties, netted approximately 7.17 million pounds of waste tires.

"That equates to about 358,712 passenger car tires, enough to fill nearly 180 semi-tractor trailers," said Rick Solomon, supervisor of the Division of Waste Management's Recycling Assistance Section.

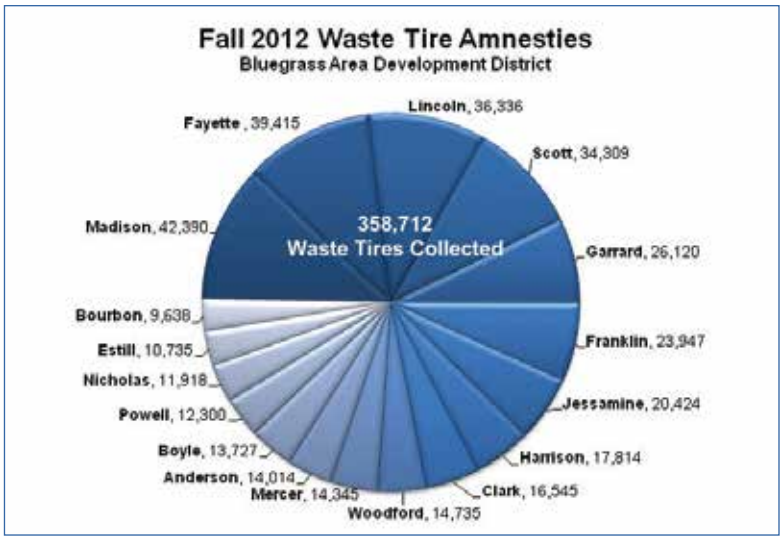
The Waste Tire Amnesty Program, held at various times, helps rid Kentucky's landscape of waste tires. During the amnesty period individuals can drop off their unwanted tires at a location within their county free of charge. The tires are then recycled through "beneficial end use" markets to become useful products such as tire-derived fuel or crumb rubber.

"The next round of waste tire amnesties will be conducted this spring in the Lake Cumberland and Lincoln Trail area development districts. Counties included in these districts are Meade, Hardin, Grayson, Breckenridge, Larue, Nelson, Washington, Marion and Taylor," said Solomon. "Local solid waste coordinators should be contacted for event locations and hours of operation."

According to recent reports, fewer tires were collected during the most recent three-year waste tire amnesty cycle—but this is no surprise. It is actually a mark of success. As stockpiles of old tires are turned in, the number of tires collected through subsequent amnesties will decline, eventually reaching a plateau that will reflect normal consumer need for the exchange of worn out and used tires.

"The division is excited about the success of the program," said Tony Hatton, Division of Waste Management director. "We look forward to the continued decline of waste tires littering Kentucky's environment."

The program's continued success relies heavily on the continuation of funding of the Waste Tire Trust Fund, which must be reauthorized through legislation. Funding comes from a $1 fee on the sale of all new motor vehicles tires sold in Kentucky. In addition to conducting waste tire amnesty programs, the fund is used to provide annual financial support directly to counties for waste tire management, award crumb rubber grants, facilitate market development for the use of waste tires, and clean up waste tires at sites where tires have been mismanaged.



TOP: Garrard County residents drop off their unwanted tires free of charge during the 2012 Waste Tire Amnesty. More than 26,000 tires were collected. DWM photo

ABOVE: Breakdown of the number of waste tires turned in during the fall 2012 tire amnesty in the Bluegrass Area Development District counties. Graph by Virginia Lewis

Since the inception of the waste tire program, approximately 21,579,591 waste tires—nearly 432 million pounds—have been collected and removed from Kentucky's environment.

For more information, visit http://waste.ky.gov/RLA/Waste%20Tires/Pages/TireAmnesty.aspx, email Ricky.Solomon@ky.gov or call 502-564-6716, ext. 4642.

Awards

Excellence in Reclamation Awards

By Paul Rothman, Department for Natural Resources
Photography by J. Hamon

The Department for Natural Resources (DNR) recently presented the 2012 Excellence in Reclamation Awards to five companies operating in the Kentucky coalfields in recognition of their outstanding level of mining and reclamation activities. Each of the five Division of Mine Reclamation and Enforcement (DMRE) regional field offices nominates a specific mine site that best exemplifies outstanding reclamation in their respective regional areas. Each nominee also undergoes a thorough and systematic review of their compliance history. Since mining operations are subject to repeat inspections and scrutiny to ensure compliance with all state and federal surface mining laws, the DNR feels it is equally important to recognize those operations that exceed their reclamation obligations.

"As a result of their hard work, these companies are an outstanding example of the exceptional reclamation that can be achieved by today's mining industry," said DNR Commissioner Steve Hohmann.

DMRE inspection staff assigned to these operations was also recognized for their efforts to ensure compliance and to reduce the environmental impacts of mining.

It is through the combined efforts of these companies and the inspectors that these sites achieve a high level of reclamation excellence. Read a detailed description about each recipient at http://dmre.ky.gov/Pages/2012-Excellence-in-Reclamtion-Awards.aspx

London Regional Office
T & T Coal Inc.

(left to right) Billy Cameron, Kevin Helton, Jessica Sandlin, Commissioner Steve Hohmann, Clayton Nantz and Thor Cummins

T&T Coal Inc. (Permit No. 855-0181) was recognized for outstanding reclamation work on their site located in Johnson County near the community of Green Hall. Due to its proximity to Sturgeon Creek, T&T Coal exercised caution and used best management practices to control erosion. The company established the combined post-mining land uses of hay land/pasture for 103.5 acres, in addition to eight acres of forestland that will serve as habitat for the endangered Indiana bat. The company's reclamation activity on this 111-acre operation closely followed a detailed set of mining and revegetation plans that were specifically developed for the site.

Middlesboro Regional Office
Xinergy Corp.

(left to right) Back row: Marvin Hammock, Bruce Cowan, John Ledington, Commissioner Steve Hohmann and Tom Crockett. Front row: Scott Cox, Bill McDowell and Larry Gulley

Xinergy Corp. (Permit No. 807-0362) received the award for outstanding reclamation work on their site located in Bell County near the community of Stoney Fork. To establish a sound reclamation strategy, mined areas were seeded soon after backfilling and grading to reduce erosion. Additional trees were planted to increase stand density and diversity. The company established a post-mining land use of fish and wildlife habitat on this 273-acre operation. Xinergy Corp. entered into an agreement with the Kentucky Department of Fish and Wildlife Resources to create a quail management area on the permit. This area was also chosen as part of the state's elk reintroduction effort where elk, deer and turkey can now be observed throughout the site.

Awards

Prestonsburg Regional Office
Laurel Mountain Resources LLC

(left to right) Back row: Eric Allen, Kelly Short, Russ Moberly, Doug Bentley, Brian Patton, Commissioner Steve Hohmann, Allen James and David Handshoe. Front row: Gena Davenport, Regina Ison, Mitzi Harless and Greg Weddington.

Laurel Mountain Resources LLC (Permit No. 880-0197) received the award for outstanding reclamation work on their permit located in Martin County near the community of Tomahawk. This site is divided into multiple permit areas and was mined, backfilled and revegetated in phases, which eliminated nearly 11,000 linear feet of pre-law highwall. Laurel Mountain Resources successfully established a beneficial post-mining land use of hay land/pasture. The company's reclamation activity on this 257-acre operation closely followed revegetation plans that were developed for the site.

Pikeville Regional Office
Deane Mining LLC

(left to right) Back row: Charles Holbrook, Glen Pope, Ron Hull, Dennis Hatfield, Commissioner Steve Hohmann and Mike Hansel. Front row: Ivan Whitaker, Deannie Castle and Brian Tussey.

Deane Mining LLC (Permit No. 867-0478) was recognized for outstanding reclamation work located on their site in Letcher County near the community of Mayking. The company has successfully established a beneficial post-mining land use of fish and wildlife habitat, which should prove useful to wildlife in the local community for years. Providing a diverse and permanent vegetative cover has attracted deer, turkey and elk. Specific tree species with exfoliating bark were planted that provides habitat for the endangered Indiana bat. The company's reclamation activity on this 127-acre operation closely followed a set of revegetation plans that were specifically developed for the site.

Madisonville Regional Office
Hopkins County Coal LLC

(left to right) Greg Logston, Lee Harris, Commissioner Steve Hohmann, Kiah Winstead, Robert Yonts and Daniel Eizenga

Hopkins County Coal LLC (Permit No. 854-0216) was recognized for outstanding reclamation work on their permit located in Hopkins County near the community of Madisonville. Hopkins County Coal established diverse post-mining land uses that include hay land/pasture, fish and wildlife habitat, permanent open water impoundments, stream restoration (Little Flat Creek) and several seasonal shallow water depressions. Little Flat Creek now supports a well-established riparian zone that adds more diverity to the adjacent fish and wildlife habitat. The company's mining and reclamation activity on this 318-acre operation closely followed a detailed set of plans specifically developed for the site.

During the ceremony, Rep. Ben Waide presented the company with a Kentucky House of Representatives citation saying "the company provides energy and jobs, and they do it responsibly."

Energy and Environment Cabinet
Office of Communications and Public Outreach
5th Floor, Capital Plaza Tower
Frankfort, KY 40601

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The 2013 Governor's Conference on Energy and the Environment — Sept. 17-18
Lexington Convention Center — Visit http://eec.ky.gov for updates

Seedling nurseries: growing trees for healthy and productive forests

White oak, also called Stave oak, is one of the preeminent hardwoods of eastern North America. It is a slow-growing tree, which enables it to reach 500+ years of age and produces copious amounts of acorn crops every couple of years. White oak can be found on a variety of sites throughout Kentucky including ridges, valleys, dry and moist areas, and in moderately acid and alkaline soils. It is one of the most valuable timber species, used for flooring, cabinets, furniture and in Kentucky, barrels. Because of its tight cooperage, which keeps liquids from seeping out, it is the preferred wood used in the manufacture of whiskey (also bourbon and wine) barrels.

White oak seedlings are available from early fall to early spring from the Division of Forestry's nurseries. Orders are shipped at your request for planting projects during the dormant period throughout the winter. To obtain an order form, visit http://forestry.ky.gov/statenurseriesandtreeseedlings/Pages/default.aspx or call the Division of Forestry at 1-800-866-0555.

Just the Facts: White oak (Quercus alba)

- ***Growth:*** White oak typically grows 65 to 85 feet in height and with a diameter of 3 to 4 feet (36 to 48 inches in circumference). The bark is light to dark gray, shallow fissured and scaly. The leaves are lobed and usually 5 to 7 inches long and turn red (usually) in the fall.
- ***Range:*** White oak has the largest growing range of all oaks in the eastern United States, extending from southeast Maine and down the Atlantic Coast to Georgia and from the Florida panhandle to as far west as Texas. States such as Arkansas, Missouri and Iowa form the western border of its range.
- ***Wildlife Uses:*** Its acorns are favored by turkeys, bears, squirrels and chipmunks, and if you are an avid deer hunter, you would want to have your deer stand somewhere nearby a white oak.
- ***Tree Trivia:*** Kentucky's state champion white oak is in Hancock County and measures nearly 100 feet tall and has a circumference of 19 feet (that's 228 inches). White oak is the state tree of Illinois, Connecticut and Maryland.