



# Land Air & Water

Kentucky Energy and Environment Cabinet

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Volume 20 Number 3  
Summer 2009

# Land Air & Water

since 1988

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**Editor and Graphic Designer**  
Cynthia Schafer

---

## Agency Coordinators

Lynn Brammer  
Lee Colten  
Allison Fleck  
Mary Jo Harrod  
Leslie Isaman  
Linda Potter  
Kimberly Richardson  
Elizabeth Robb Schmitz

---

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energy hog. Make a cool change with  
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cold shoulder.

U.S. households have 44.5 million  
refrigerators over 10 years old, 12.7 million  
of which are second units. Together, these  
inefficient appliances eat up \$4.9 billion a  
year in energy costs.

ENERGY STAR's *Make a Cool  
Change Campaign* encourages you to retire  
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needed, replace it with a new model bearing  
the ENERGY STAR label. Led by the U.S.  
Department of Energy, the campaign aims

to help the country save energy, save money and protect the environment.

Even if you bought your refrigerator or freezer in the mid-1990s, the time may be  
right to replace it. This is especially true if you have a side-by-side refrigerator, which  
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erator or freezer is costing you. The savings may justify replacing it now.

Think carefully before you replace your second refrigerator or freezer. Unless you  
always need the extra room for groceries, you're paying big bucks to keep a few drinks  
cold. If your needs are small, consider a compact model like the ones students use in  
dorm rooms.

Don't donate or sell your old unit, lest it become someone else's energy hog. When  
you're ready to retire your old unit be sure it is recycled. If you buy a new model, many  
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on appliance replacement incentives and tips on recycling your old unit.

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appliance manufacturer sells ENERGY STAR qualified models, which offer advanced  
technologies that keep your food fresher, longer. Many new models will also look as good  
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# Land Air & Water

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## Our Cover



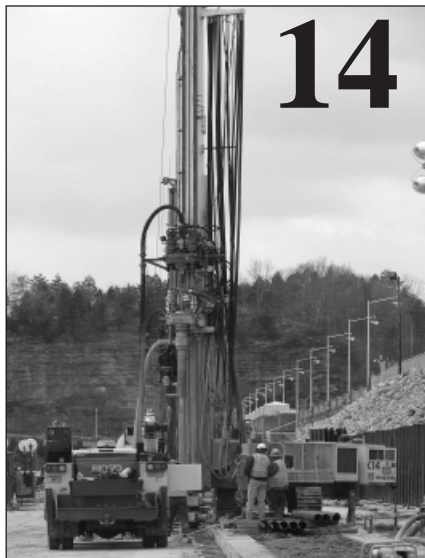
This male widow skimmer (*Libellula luctuosa*) gracefully lands for a few brief moments on the banks of Elkhorn Creek in Franklin County. A male blue dasher (*Pachydiplax longipennis*) appears in the background. Photograph by Cindy Schafer, editor



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**BELOW:** The preliminary treatment building and influent pump station. **RIGHT:** Mike Kendall leads a tour of the preliminary treatment facilities. Photos courtesy of Sanitation District No. 1



# New wastewater facility blends form with function

By Alison Simpson  
Division of Water



No one wants a wastewater treatment plant located near their home, but positive community involvement in the city of Alexandria produced a neighborhood-friendly solution to a sanitary sewer system that was inadequately meeting the needs of the city.

The recently completed Eastern Regional Water Reclamation Facility in northern Kentucky is expected to alleviate storm water overflows that have plagued Campbell County and accommodate future population growth.

Storm water overflows during heavy rains had gotten so bad in recent years that the Kentucky Division of Water issued a moratorium on new development in the city. When Sanitation District No. 1 (SD1) was asked by the city to take on the overflow project, they determined that a larger facility was needed to handle the load.

“There was already a small treatment facility in Alexandria,” said Peggy Casey, director of public relations for SD1. “There was so much storm water getting into the system when it rained that the plant was flowing over the sides of the walls at the tanks...we were losing millions of gallons of our flow each

year. The new water reclamation facility helps alleviate that.”

Located off state Route 10 in southern Campbell County, the new facility has an average flow of 4 million gallons per day (MGD), a peak daily flow of 12 MGD and a peak hourly flow of 20 MGD. It employs state-of-the-art disinfection with ultraviolet light and includes an aerated 1.5 million gallon equalization basin to manage increased flow from rain events.

In addition to the construction of the facility, other improvements included installation of 11 miles of sewer line (60 percent of which was pre-existing), replacement of four pump stations and construction of one new pump station. It eliminated two pump stations and three small wastewater treatment plants.

One of the unique elements of the facility involves odor control. All possible odor-producing locations in the facility are covered and vented, and odor is treated through conventional biofiltration.

Environmental soundness was an important factor in the design plan.

“They wanted sustainable features [and to] not let anything be discharged to the environment without being treated,” said project manager Brad Montgomery of GRW Engineers Inc., that designed the new facility. “They’ve taken a holistic approach to the environmental facility. A lot of that had to do with SD1’s approach to the project.”

Casey said this is just one of many features unique to the plant, thanks to active community involvement in the planning

process.

“The site selection process was different than we’ve ever done before,” she explained. “We put together a site evaluation committee made up of

*“I’ve been in this business for 25 to 26 years. This project is the best example of a collaborative effort between many parties that I’ve ever been involved with. I attribute a lot of the success to that collaborative effort.”*

Brad Montgomery  
GRW Engineers Inc.

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**ABOVE:** Logs inoculated with shiitake mushrooms are stacked throughout the moist, shaded woods. **RIGHT:** Native grasses and wildflowers are planted on Jack Stickney's farm. This compass plant is a member of the composite family (sunflowers). The leaves of the plant face the morning and afternoon sun and orient themselves in a North and South direction. The plant supposedly served as a compass to prairie travelers. Photos by KDF



# Stewardship in Kentucky

*A small farm in Estill County stands tall*

**By Lynn Brammer**  
Division of Forestry

In 1987, Jack Stickney purchased a small, wooded farm in Estill County and began a long list of tree farming practices that included everything from planting trees to producing shiitake mushrooms to selling carbon credits on a newly emerging market. Hard work, a desire for self-sufficiency and a genuine appreciation for forest management are undeniable attributes of Stickney, and this year his stewardship efforts will not go unrewarded. Stickney was recently nominated and chosen as the Outstanding Forest Steward of the Year by state foresters from the Kentucky Division of Forestry (KDF).

## *Managing the Forest*

Stickney, a geologist for the Kentucky Rural Water Association, recognized the need for proper forest management immediately after purchasing the property 22 years ago. Initially, he sought assistance from the KDF for advice on planting trees and improving existing timber stands. In 1997, he became certified as a forest steward after signing up for the division's forest stewardship program, which provides free forest management advice to landown-

ers with more than 10 acres of woodlands.

Over the years, Stickney has planted more than 800 trees on his 133-acre farm. Black walnut and pecan trees are planted along the rich bottomlands adjacent to Twin Creek and soft mast trees are planted throughout the woodlands to improve wildlife habitat. He has also completed over 50 acres of timber stand improvement (TSI) by removing vines from crop trees, cutting cull (defective) trees, pruning trees and thinning undesirable species.

Stickney works closely with a number of KDF foresters and ranger technicians in the Kentucky River District, and he is quick to credit the division for much of the forestry knowledge he has acquired. He is also an important voice for conservation in his community as evidenced by a string of Tree Farm and Stewardship Forest signs along the back road leading to his property.



*Jack Stickney (right) works closely with KDF forester Jason Hunt and others in obtaining forest management advice.*

Photo by KDF

*Continued on Page 20*





# Vigilance in dam safety

## Environmental Response Team receives training to spot dam defects

By Allison Fleck  
Division of Water

**UPPER LEFT:** *Rob Frances (center) supervisor of the Environmental Response Team, discusses the process of prepping a pump to remove air from a siphon in preparation for lowering a lake level.*

**UPPER RIGHT:** *Mortaza Rabiee (left) with the Division of Water Dam Safety and Floodplain Compliance Section, holds a prism as measurements are taken to calculate water flow through a siphon being held by Barbara Risk, an environmental inspector with the Frankfort Regional Office and ERT member.*  
Photos by Marilyn Thomas

Kentucky’s Environmental Response Team (ERT) is helping state dam safety officials keep an eye out for potential problems with dams throughout the state.

ERT staff are assigned to Department for Environmental Protection regional field offices around the state. They have been trained to respond to natural disasters such as floods, earthquakes, forest fires, landslides, water shortages, tornadoes and other severe weather.

Scott Phelps, supervisor of the Division of Water Dam Safety and Floodplain Compliance Section, said the ERT staff is in a position to help his staff evaluate potential dam emergencies by relaying coordinates, physical descriptions and observed downstream development. Thanks to cell phones, photographs can be e-mailed to dam safety staff in Frankfort for immediate evaluation.

With 965 structures on the Kentucky Division of Water dam inventory, it makes sense to enlist ERT staff already in the field to help assess signs of potential failures—particularly at high-hazard dams.

“When most people think about dams, they picture Wolf Creek or Hoover Dam,” said Division of Water dam safety inspector Marilyn Thomas. “A dam doesn’t have to be huge to be considered high hazard. It all depends on how much development has occurred downstream.”

During the dam safety training, participants learn how to identify deficiencies

and changes in dam structures that could indicate pending failure. A hands-on workshop provides a lesson on assembling the equipment used to drain a lake.

Phelps conducts the classroom training session. He is very clear about his first point.

“The first thing you need to know is that all dams leak,” he said. “You can’t keep water from going through. There will be seepage. The question is how much is too much.”

Using photographs of actual dam problems, Phelps discusses leaking valves, lateral cracking, animal burrows, excessive vegetation, moist toe drains, overtopping, sloughing, sliding and seepage—any of which could contribute to an environmental emergency.

An environmental emergency is defined as the spill or unexpected discharge of a hazardous material to water, air or land that threatens the life, health or safety of citizens or the environment. Failure of a dam in a populated area fits into this category.

“As with any emergency, time is the most critical factor,” said Phelps. “By taking advantage of the presence and expertise of the Environmental Response Team, we will be in a much better position to evaluate potential dam problems, initiate mitigation and, if necessary, notify local emergency personnel.”

# New wastewater facility blends form with function *Continued from Page 1*

Alexandria residents and county residents. They looked at five sites, narrowed it down [and held] a public meeting to allow residents to talk about the different sites on the list.”

Area residents were also invited to a public meeting to help determine the architectural design of the plant to help it blend in with the surrounding area, said Mike Kendall, director of regulatory compliance for SD1.

“There’s a subdivision close to the plant,” he said. “We looked at their color of brick, roofs and tried to give it a residential appearance.”

Even the name of the facility was suggested by the residents.

“They asked that we not call it a wastewater treatment plant,” Casey said. “That’s why we call it a water reclamation facility. We were conscious of the signage and making it look more residential.”

Construction got underway in 2004 and the facility began receiving flow in September 2007. Full construction was completed in September 2008.

The cost for construction of the plant, nearly \$32.5 million, was funded entirely by a Clean Water State Revolving Fund (CWSRF) loan at a 3.2 percent interest

rate. Casey said the loan translated into \$20 million in savings for their customers.

The CWSRF was created to provide low-cost financing for construction of publicly owned wastewater treatment works and nonpoint source control systems.

Casey said community response to the new facility has been very positive.

“We have received overwhelming support from both the city and the county,” she said. “The city’s been a great partner with us and has been very supportive.”

Montgomery praised SD1 management for its commitment to the project. Rather than be seen as a nuisance, SD1 wanted the new facility to blend in with the community and become an integral part of it.

“They’re using their building as a satellite police station. They’ve given tours. They’ve participated in local activities.



*The treatment facility uses state-of-the-art disinfection with ultraviolet light and biofiltration technology for odor issues.* Photo by Sanitation District No. 1

They’ve incorporated into the community almost seamlessly,” he said.

“I’ve been in this business for 25 to 26 years,” said Montgomery. “This project is the best example of a collaborative effort between many parties that I’ve ever been involved with. I attribute a lot of the success to that collaborative effort.”

## Counties and cities going green

By Amanda LeFevre  
Division of Compliance Assistance

The nation has definitely seen increased interest in all things green, and Kentucky is no exception. There are already examples of green buildings, green infrastructure and managed growth here in the Bluegrass. However, there is always room for more and just because a community isn’t large or isn’t already on the bandwagon, it doesn’t mean that it can’t join in the revolution.

As a result, the Department for Environmental Protection (DEP), the Kentucky Association of Counties (KACo) and the Kentucky Sustainability Institute (KSI) have teamed up to offer local governments a chance to learn about going green, being sustainable and helping their environment. Through “Counties Going Green” workshops, the partners will help local government officials learn about methods they can use to help their communities be more sustainable in the future.

These workshops, which are open to county officials and KACo members, will cover a range of topics including energy, managed growth, green terminology and resources available through both the federal and state government. Attendees will also receive reference materials and guides in green decision

making. It is a beginner’s course and open to anyone who is interested but may not know how to get started.

KSI and DEP will also host workshops open to city officials and community groups later this summer and during the Kentucky League of Cities annual conference and exposition in Covington on Sept. 22–25, 2009. For more information on those events, watch the KSI Web site at [www.newcities.org](http://www.newcities.org). KSI is a partnership among the Kentucky League of Cities, the NewCities Institute and DEP. In April, KSI received a 2009 EQC Earth Day Award for its efforts to provide education on going green, managed growth and sustainability.

Counties Going Green event dates:

- July 22—London, Cumberland Valley Area Development District
- Aug. 25—Cave City, Convention Center
- Oct. 27—Gilbertsville, Kentucky Dam Village State Resort Park

For more information on the KACo workshops, visit [www.kaco.org](http://www.kaco.org).



# Operation Swift Solution complete at Depot

*Three GB mixture one-ton containers off the chemical stockpile inventory*



The one-ton container halves were shipped to Rock Island Arsenal, Ill., for smelting and recycling.

BGAD submitted an OSS closure package to the Division of Waste Management for final approval on March 25. Approval of the breakdown and removal of equipment and materials, including the chemical agent transfer system (CHATS), to Aberdeen Proving Ground was given by the division.

The OSS area was inspected by the Division of Waste Management on April 27, and a clean closure verification letter was issued in June to bring the whole process to a close.

**By Shannon L. Powers**  
Division of Waste Management

Operation Swift Solution (OSS), the operation to rid Blue Grass Army Depot (BGAD) in Madison County of the three one-ton containers filled with GB (Sarin) nerve agent mixture, is complete.

Approximately 160 gallons of mixture was treated under the authority of a temporary authorization request, a provision in the Resource Conservation Recovery Act that grants authority to perform treatment of hazardous wastes without having to modify the facility permit for a one-time activity.

“Overall, this operation has demonstrated that chemical warfare agents can be effectively treated using the neutral-

ization process,” said Division of Waste Management Inspector Bill Buchanan, who oversaw OSS for the division.

Begun on Nov. 12, 2008, the operational and cleanup portion of OSS, conducted by members of the Blue Grass Chemical Activity and a team from the U.S. Army Edgewood Chemical and Biological Center from Aberdeen Proving Ground, lasted almost five months. Nearly 8,000 gallons of hydrolysate, the resulting mixture once the GB was combined with caustic materials, was generated during the process. Before being shipped on Feb. 26 to Veolia Environmental Services in Texas for further destruction, the hydrolysate



had to pass analytical testing to prove it had reached 99.9999 percent destruction efficiency (about 60 parts per billion).

The solid wastes generated during the process and the steel one-ton container halves were decontaminated and air-monitored down to a level of <1 VSL (vapor screening level). Over 50 drums of solid waste were shipped to Veolia for further destruction.

**TOP:** Two Eurotainers filled with hydrolysate from the Blue Grass Army Depot’s Operation Swift Solution await transfer to Veolia Environmental in Texas.

**ABOVE:** The Eurotainers being weighed before the long haul to Texas. Photos provided by Blue Grass Army Depot





**LEFT:** *The Brown Hotel staff participated in Operation Brightside's Communitywide Cleanup this year. BELOW: Proctor & Gamble products used by the hotel are covered by the "Green Guarantee" that ensures environmental safety of its products. BOTTOM: Cardboard and other items are picked up twice weekly to be recycled.*  
Photos by Mary Jo Harrod



## Brown Hotel and Army depot are environmental leaders

By Mary Jo Harrod  
Division of Compliance Assistance

**W**hat do the Blue Grass Army Depot in Richmond and The Brown Hotel in Louisville, with its 293 guest rooms have in common? They are members of KY EXCEL, the state's environmental leadership program. KY EXCEL members are able to choose from four levels of membership—from the advocate level that requires only one voluntary environmental project to the master level with a minimum of five voluntary projects. With the members at all levels choosing their own projects, KY EXCEL has a variety of creative ways to benefit the state's environment.

Marc Salmon, director of Human Resources at **The Brown Hotel**, recognized that in the hotel business many items are received in containers that can be recycled. Toilet paper, produce, food staples and other items are packaged for delivery in cardboard. The hotel contacted Metro Louisville Recycling and now, twice weekly, all nonconfidential office paper, guestroom newspapers, magazines, catalogs and phone books are picked up,

usually filling 14 large recycling "toters." The Shred-It Co. picks up once monthly and recycles all confidential office paper.

"As of March 1, 2009, our firm's share of the wood saved through Shred-It's recycling program amounts to 58 trees saved," says Salmon.

Ink cartridges and five-gallon plastic mayonnaise buckets are also recycled instead of tossing them into the trash. Salmon is working with Metro Louisville Recycling to pick up glass, especially wine bottles from wedding receptions and glass soda bottles, which the hotel uses rather than plastic.

"We were doing things already to impact the environment, because it was good business sense to do those things," he says. "Each time we have our compactor picked up, it costs \$600. In April 2008, we had the compactor picked up three times.

*Continued to Page 8*



# Community revitalization

## *Brownfields focus of cleanup activities*

By Amanda LeFevre  
Division of Compliance Assistance

Kentucky has once again received money to address its neglected and potentially contaminated properties. These properties, known as brownfields, are often abandoned or underutilized because of real or perceived contamination. They include old gas stations, former mining sites, rail yards and abandoned factories, just to name a few. Each year, the U.S. Environmental Protection Agency (EPA) accepts applications for grants to assess and remediate these properties. From applications that were submitted last November, three projects were awarded funds for future cleanup activities.

**1** The **city of Georgetown** received a \$200,000 cleanup grant for the former Empire Pencil Factory. This money will be used to address lead contamination at the site, which was formerly the home of the Georgetown Police Department until health concerns were raised. Grants funded with recovery monies (see information in box), such as the city of Georgetown, will have additional reporting requirements. Cleanup grants provide funding for recipients to carry out cleanup activities at brownfield sites they own.

**2** **Community Ventures Corp.** received a \$200,000 cleanup grant for 265 Midland Avenue in Lexington, which was formerly a dry-cleaning establishment. More than five years ago, Community Ventures Corp. (CVC) began acquiring properties in the east end area with the goal of working with residents to create community-centered revitalization and redevelopment initiatives. It is in a continuation of this effort that CVC received the EPA grant to clean up the property. Future development will be determined by a community-centered revitalization process.

**3** **Cumberland Valley Area Development District (ADD)** received a \$200,000 communitywide assessment grant which will be used to conduct site assessment and planning for eventual cleanup at one or more brownfield sites or as part of a communitywide effort. The purpose of the ADD is to improve the quality of life in the Cumberland Valley by promoting economic development to provide basic facilities essential to the stimulation of business, manufacturing, services, tourism and commercial activities; promoting human resource development to improve health, welfare and education systems; and providing a forum for elected officials and citizens to reach a consensus and establish local-state-federal partnerships to seek coordinated solutions to problems. The Cumberland Valley ADD serves Rockcastle, Jackson, Clay, Laurel, Knox, Whitley, Bell and Harlan counties.

Brownfield redevelopment can be an effective economic development tool as it can bring life and business back to properties that formerly create blight, crime and falling property values.



*This former dry cleaning establishment on 265 Midland Ave. in Lexington will be cleaned up to help revitalize the east end area.* Photo courtesy of the Community Ventures Corp.

Even though stimulus monies and regular brownfield funds have already been awarded, it doesn't mean communities can't get their piece of the brownfield pie. The state has funding available to provide free assessments on qualifying properties for government entities and nonprofits.

The brownfield program is also gearing up for the next round of grants. A request for applications could come as early as July or August. Brownfield grant writing workshops will be held on Sept. 10 at the Pennyriple Area Development District and Sept. 11 in Frankfort. For additional information on the workshops or brownfield grants, contact Amanda LeFevre at 800-926-8111 or [amanda.lefevre@ky.gov](mailto:amanda.lefevre@ky.gov).

Additional information on the EPA Region 4 brownfields recipients and their projects is available at <http://www.epa.gov/region4/waste/bf>.

### *Additional brownfield funding*

Communities in 46 states, four tribes, and two U.S. territories will share in a total of \$111.9 million in grants to help revitalize former industrial and commercial sites, turning them from problem properties to productive business and community institutions. The grants include \$37.3 million from the American Recovery and Reinvestment Act (ARRA) and \$74.6 million from the EPA brownfields general program funding. Grant recipients are selected through a national competition. The Brownfield Program encourages development of America's estimated 450,000 abandoned and contaminated waste sites.

This year, the usual funding amount has been supplemented by a portion of the \$100 million in stimulus monies from the ARRA earmarked for brownfields. President Obama has directed that the ARRA be implemented with unprecedented transparency and accountability. As a result, the American people can see how every dollar is being invested by visiting [www.Recovery.gov](http://www.Recovery.gov). For more information on brownfields cleanup revolving loan fund pilots and grants and other brownfields activities under the Recovery Act, visit <http://www.epa.gov/brownfields/eparecovery/index.htm>.



# Brown Hotel and Army depot are environmental leaders

Continued from Page 6

Since the hotel has been recycling, there have been huge savings. In April 2009, the compactor was picked up only once, which resulted in a savings of \$1,200 for that month.”

The Brown Hotel is demonstrating its commitment to environmental leadership in many other ways. Since June 2007, the Brown has been offering stayover guests the option of only laundering towels and replacing bedding on a per-request basis causing a significant savings in water resources.

The *Brown Hotel Goes Green* bulletin board was put in place in July 2008 to keep staff informed of the hotel’s environmental initiatives. Each month a go-green tip is highlighted in the employee newslet-

ter, *The Brown Bugle*. A go-green section was added to the new hire orientation attended by all Brown Hotel staff members. On March 28, 2009, hotel staff participated in Operation Brightside’s Community-wide Cleanup to raise awareness and participate in Mayor Jerry Abramson’s “Go Green Louisville” effort. Paper recycling bins are available in all conference rooms. Thermostats in empty meeting rooms are monitored to cut energy waste.

All of the Proctor & Gamble Pro Line Chemicals used by the Brown’s housekeeping department are covered by P&G’s Green Guarantee, which ensures the environmental safety of its products, packaging and operations. P&G’s Pro Line products meet or exceed Green Seal standards and the U. S. Environmental Protection Agency’s guidelines. Laundry products that use less water and meet these Green Seal standards produce softer, cleaner towels and tend to prevent fraying. Each year, Salmon challenges vendors to create softer tissues and toilet paper that are made

**LEFT:** Scrap metal scattered around the depot was collected, decontaminated and recycled.

**BELOW:** A prescribed burn at the depot. Photos courtesy of the Blue Grass Army Depot



## New KY EXCEL members

Recently, the following businesses, individuals, organizations and communities have joined KY EXCEL. Setting a positive example, these new members have committed to a variety of projects to improve and protect Kentucky’s environment. Call 1-800-926-8111 for more information or visit <http://www.dca.ky.gov/kyexcel/>.

### Advocate

The Brown Hotel—Louisville  
Shelby and Judy Jett Residence—  
Lexington  
EnSafe—Bowling Green

### Partner

Amgen USA Louisville Distribution  
Center (LDC)—Louisville

### Leader

Murakami Manufacturing USA Inc.—  
Campbellsville

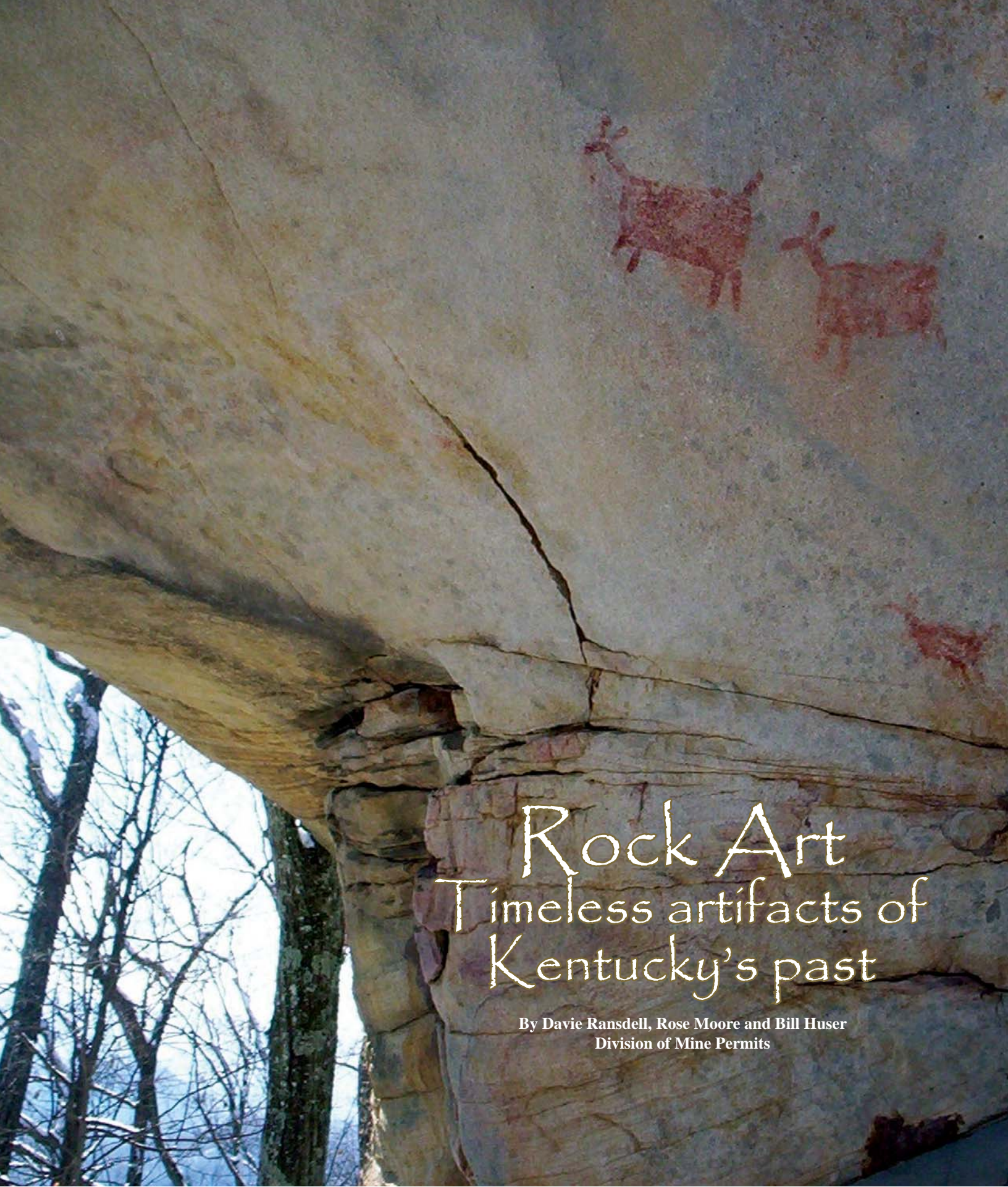
from recycled paper, in hopes that one day the hotel might provide them to guests.

There can be a lot of waste in a hotel kitchen, but Salmon says that the chefs are very attuned to saving water and minimizing waste. For example, the delicious fruit Danish and croissants, which are available each morning, are used to make the hotel’s bread pudding later in the day.

“We asked ourselves why we should use plastic silverware or styrofoam cups in the employees’ cafeteria when we could use the real thing. We have dishwashers available to wash and sterilize everything,” says Salmon. “All guestroom hallways and guestroom bedside, desk and standing lamps are now equipped with energy-saving CFL lightbulbs. Guestroom thermostats have been replaced with energy-saving digital thermostats to cut energy use significantly. Guests expect to see things like this. Besides being a benefit to the environment, these changes were also a good investment and made good business sense.”

Continued on Page 16





# Rock Art

Timeless artifacts of  
Kentucky's past

By Davie Ransdell, Rose Moore and Bill Huser  
Division of Mine Permits



*OPPOSITE PAGE: Three deer (believed to be does) painted with red pigment may be dated to the Mississippian Period between A.D. 1000 and 1600.*

*RIGHT: Rose Moore and Davie Ransdell, staff of the Critical Resources Review Section of the Division of Mine Permits, inspect the pictographs with a DMRE inspector.*

Photos by Bill Huser



On Jan. 15, 2009, a Kentucky Division of Mine Reclamation and Enforcement environmental inspector had a chance encounter during a routine inspection that may prove to be of historic significance to Kentucky and its citizens. The inspector (who is remaining anonymous due to the sensitive nature of his work) was approached by two hunters who were concerned about proposed additional mining in the area. During the conversation, one of the men said, “Just don’t let them hurt that rock.” They went on to describe a rock overhang, located on top of the ridge in an area overlying the proposed mining. There were “Indian paintings” on the rock that had “been there as long as we can remember,” they said.

### The Discovery

The inspector followed their directions and found the site just as the hunters had described—pictures of deer that are immediately identifiable and very well preserved. They looked old, but there was other, modern graffiti in the area just down the ridge. The pictographs (painted rock pictures), however, looked very different from the modern “art.” The inspector knew that under Kentucky law, as well as the Surface Mining Control and Reclamation Act, the site would require a thorough investigation as regulations pertaining to cultural resources provide guidance to prevent, to the maximum extent possible, any adverse impacts to historic places.

After taking photographs, the inspector returned to his regional office to discuss appropriate next steps with his manager. It was at that time Bill Huser, staff archaeologist of the Critical Resources Review Section (CRRS), Division of Mine Permits, telephoned the inspector to discuss a nearby permit application. As soon as he heard the description, Huser asked the inspector to e-mail the photographs. Within minutes of their receipt, Huser enthusiastically advised Rose Moore, archaeologist consultant, and Davie Ransdell, supervisor, both of CRRS, of the new find. The consensus was that the pictographs appeared to be of prehistoric origin. Because the pictographs were located close to two existing mine permits, arrangements were made to make a field visit as soon as possible.

The following Wednesday, Huser, Moore, Ransdell and the inspector conducted a site visit to confirm the location through GPS, determine the condition of the area, and to more completely document the pictographs. The group found additional rock art, photographed it and collected information for a site plan map and a state site form. Time constraints and snow cover prevented a more thorough investigation of the area. However, in April, a follow-up inspection of the ground surface along with shovel testing to determine if there were additional archaeological components to the site was conducted by Moore, Huser and Lori Stahlgren, staff archaeologist for the Kentucky Heritage Council.

*Continued on Page 15*



# Students learn about coal, reclamation

By Corey Ann Howard  
Division of Abandoned Mine Lands

resource material from which students learned about the formation, types and uses of coal, as well as types of mining, careers in mining and mine reclamation. The grant also funded transportation costs for a separate field trip to Dotiki Mines in Nebo, Ky., where students explored mining operations, mine safety and rescue, and mine expansion.

In the classroom, speakers from AML, the Hopkins County Conservation Extension Office and other agencies spoke to students on various mine-related topics. Mark Meade and Adam Humphrey of AML presented a slide show on reclamation and the hazards of mining, while promoting the *Stay Out/Stay Alive* campaign that warns children and adults of the dangers of abandoned mines.

True environmentalists, Meade and Humphrey were excited about the students getting their hands in the dirt.

"Tree planting is a great way for kids to become involved in reclamation. It's really cool to show others a tree you planted and to watch

it grow. It is something they can show their kids someday," said Meade.

Students also completed projects for the annual CEDAR Coal Fair, a multi-county educational event where individuals compete in art, science, math, music, literature and multimedia. Pride Elementary had eight winners recognized for their work. However, it seemed the tree planting event was where the students had the most interactive fun.

"Our students really enjoyed the hands-on experience of planting trees. They will always remember the time everyone took to work with them to make a difference in our environment," said Gates.

She is especially pleased three classrooms of students from Pride were able to participate in the field trip; whereas, last year only her homeroom class was involved in the project.

"I certainly plan to look for more opportunities to collaborate with these agencies to provide our students with outdoor learning opportunities," she said.



*Pride Elementary students participate in tree planting activities at Joseph Fay Britt-White City Wildlife Management Area*

For the second consecutive year, Kelly Gates, a 12-year teacher and former student of Pride Elementary School in Madisonville has coordinated with the Division of Abandoned Mine Lands (AML), Department of Fish and Wildlife Resources and other agencies to teach her students about coal mining in Kentucky.

This year, approximately 65 second and third graders planted trees at the Joseph Fay Britt-White City Wildlife Management Area, site of AML's former White City Stave Factory reclamation project. With hands-on instruction led by AML and Fish and Wildlife employees, nearly 100 tree seedlings, specifically white oak and bur oak, were planted.

For these students, this field trip to White City concluded an in-depth classroom study of coal mining. Pride Elementary was awarded an educational grant from

CEDAR West Inc. to carry out the educational study unit. CEDAR West, which stands for Coal Education Development and Resources, is a nonprofit, volunteer-only corporation that is a partnership among the coal industry, business communities and educators for the purpose of improving the coal industry's image. Its mission is to increase the knowledge and understanding of the benefits the coal industry provides in our daily lives by providing financial resources and coal education materials to implement its study in the school curriculum. CEDAR targets public and private schoolchildren in grades K-12 in the western Kentucky counties of Ohio, Union, Hopkins, Webster, Muhlenberg and Henderson.

Pride Elementary used the CEDAR grant to purchase



**TOP:** AML's Adam Humphrey teaches a student the dibble-bar planting method. Photo by Eric Williams, Kentucky Department of Fish and Wildlife Resources

**LEFT:** Students from Pride Elementary participated in the tree planting event at Joseph Fay Britt-White City Wildlife Management Area. Photo by Kelly Gates





*Air monitoring equipment is delivered to the designated school where it will stay until sufficient air quality samples are collected.* Division for Air Quality photo

# EPA tests outdoor air quality at Kentucky schools

*Three Ashland area schools chosen to participate in monitoring event*

**By Elizabeth Robb Schmitz**  
Division for Air Quality



*This monitor records air samples to determine if hazardous air pollutants are present.*  
Division for Air Quality photo

In the wake of a number of media stories concerning air toxics and the potential for high levels of them in the air outside of schools, U.S. Environmental Protection Agency (EPA) Administrator Lisa Jackson has made monitoring for air toxics outside of schools a priority for the nation. In fact, during her confirmation hearing, she was queried by Sen. Barbara Boxer about her intent to do so, and is following through on her commitment. Administrator Jackson has redirected \$2.25 million from the competitive Community Scale Air Toxics Monitoring Grant program to pay for additional monitors in states that do not have the necessary equipment to proceed with monitoring.

Air toxics are chemicals emitted from industry and transportation sources such as cars, trucks and buses. The Clean Air Act lists 187 of these pollutants (also known as hazardous air pollutants), which have the potential to harm human health over long-term exposure, and have been linked to increased risk of cancer along with other effects including respiratory and neurological effects. Risk levels for these pollutants are based on health impacts over 70 years of continuous exposure.

From 1990 to 2005, levels of toxic air emissions declined by 41 percent. While this decline is demonstrative of the work of state and federal agencies, levels of air toxics in a local area can vary due to weather patterns and proximity to sources of the pollutants.

EPA recently announced a list of 62

schools in 22 states across the country that will be monitored for air toxics in the coming months, including three in Kentucky. These schools were chosen based on information that included the mix of pollution sources in the area, scientific information about certain pollutants and their health effects, results of computer modeling, stories from a newspaper series that looked at outdoor air at schools and information provided by state and local air agencies, including the Kentucky Division for Air Quality (DAQ). Monitoring the air outside these schools and measuring the actual concentrations of these pollutants will help the DAQ and EPA understand if health could be effected in these areas.

Should the DAQ find anything unexpected, the agency would immediately inform school and community officials. Working with concerned stakeholders, the division would locate the exact source(s) of these chemicals that pose an unacceptable health risk and mitigate those exposures. If after the initial round of sampling, more data is needed to make an informed decision, sampling will continue until the DAQ and EPA have enough data to be certain of the risks involved. EPA is ordering monitors now, and monitoring is expected to commence within the next 60 days.

The Kentucky schools that are being monitored are Crabbe, Charles Russell, and Hatcher elementary schools in Ashland.





# Rolleigh Peterson Educational Forest to become public park

**Article and photographs by  
Lynn Brammer, Division of Forestry**

The Rolleigh Peterson Educational Forest, purchased last summer by the Kentucky Division of Forestry and Louisville Metro Parks, will ultimately become a public park as well as a carefully managed walnut plantation.

The property, which is located along Floyds Fork in Jefferson County, was purchased to expand publicly accessible park lands and to continue forest manage-

ment on one of the largest known walnut plantations east of the Mississippi River.

The previous owners, Rolleigh and Patricia Peterson, planted and maintained around 5,800 black walnut trees on the 98-acre farm as an investment for their daughter Susan Peterson Trendel, who died in 1998. Many of the trees were planted in the early 1970s and were managed until Rolleigh Peterson died in 2005. In 2008, Patricia Peterson sold the property to the Louisville Metro Government and the Commonwealth providing that it serve as a legacy to her late husband and daughter.

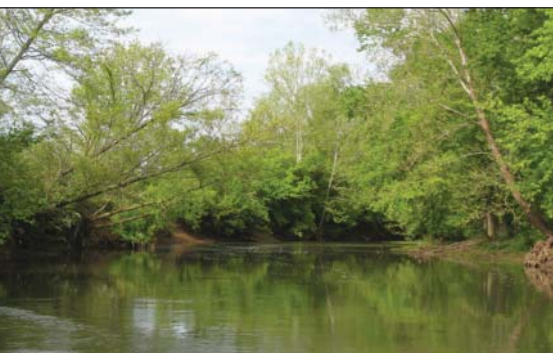
City and state officials are currently developing a forest stewardship management plan to ensure sustainability of the plantation. Stewardship activities such as removing vines, eliminating invasive species, pruning limbs and thinning undesirable trees will be priority in the early stages of management.

Other plans for the property include building a short hiking trail, which will

eventually connect to the 100-mile paved Louisville Loop trail. Louisville Metro Parks will also conduct environmental education programs for the public to learn about forest stewardship and conservation.

Rolleigh Peterson Educational Forest will be open to the public once the management plan is completed, hiking trails are built and parking areas are established.

Additional information about the forest can be found online at <http://www.forestry.ky.gov/programs/stateforest/Rolleigh+Peterson+Educational+Forest.htm>.



**TOP LEFT:** *Invasive species like winter creeper and bush honeysuckle will be removed to improve the health of the walnut plantation.* **TOP RIGHT:** *Black walnut trees planted in the early 1970s along Floyds Fork.*

**LEFT:** *Floyds Fork serves as a boundary along the Peterson property.*



# Wolf Creek dam

Remediation enters second phase, site crawling with activity



**TOP:** A hydraulic backhoe loads rock and rubble into a dump truck.

**LEFT:** A hydromill, shipped in pieces from France, was reassembled on the work platform to chew down through the dam to excavate space for building a concrete barrier wall.

**BELOW:** Contractors from Italy and France have begun construction of a massive concrete wall embedded deep within the earthen portion of the dam.



From a distance, the slopes of Wolf Creek Dam resemble the playground of a child of Brobdingnag, the imaginary land of giants in Jonathan Swift's *Gulliver's Travels*. Bulldozers precariously prowl the steeply inclined bank from water's edge to the top and down again. Dump trucks move loads of rock and rubble to widen the work platform. A towering hydromill hums incessantly as it burrows into the earth digging a long, deep trench.

But this is not child's play. Work crews are executing a major \$584 million rehabilitation plan to control seepage and improve the long-term stability of Wolf Creek Dam "for many generations to come," in the words of Lt. Col. Bernard Lindstrom, commander of the Nashville District of the U.S. Corps of Engineers.

The first phase of the remedial plan, deep foundation grouting to fill voids, was begun in 2006 and completed last September. The \$67 million grouting program involved pumping a mixture of sand, Portland cement, water and chemical additives through small-diameter holes drilled through the dam. When the project was completed, nearly 900,000 gallons of grout had been injected into the foundation via 1,300 bore holes.

The second phase of the plan now underway involves construction of a concrete wall deep into the foundation as a long-term barrier to seepage. The wall, sinking to depths of 275 feet, will be built along the entire length of the earthen portion of the dam—approximately 4,200 feet—and have a minimum thickness of 2 feet.

The wall will be the second such barrier built into the dam to stop leakage. The original wall, installed during the 1960s, was insufficient in depth and width to prevent seepage through the karst limestone region underlying the dam. The region is marked by sinkholes, bulging rocks, caverns and underground streams.

Contractors are currently installing a concrete guidewall along the length of the earthen dam to ensure proper alignment of the barrier wall. Next, they will install a concrete embankment wall to protect the earthen embankment during barrier wall construction.

The barrier wall itself will then be built. It will consist of secant piles or panels installed through the protective embankment wall to produce acceptable alignment and continuity of the wall sections.

The entire remediation project is expected to be completed by the summer of 2012, when waters in Lake Cumberland can again return to higher levels. The U.S. Army Corps of Engineers has kept the lake about 40 feet below normal summer level since early 2007 in order to reduce pressure on the dam while repairs are underway.

**Article and photographs by Allison Fleck  
Division of Water**

# Rock Art

## Timeless artifacts of Kentucky's past *Continued from Page 10*

### Kentucky's Rich History

According to the Kentucky Heritage Council, Kentucky has a varied archaeological heritage, with archaeological sites located in every county of the Commonwealth. More than 19,000 sites have been recorded around the state. Prehistoric sites include seasonal camps, villages, burials mounds and earthworks. Native Americans occupied some of these sites more than 12,000 years ago, while they occupied others less than 300 years ago.

### What Do They Mean?

The location and the motifs present at the site are important to its interpretation and understanding the culture that produced it. There are clear stylistic differences between the deer groupings (believed to be does) that indicate work produced by multiple individuals. Dr. Bryan Gordon from the Canadian Museum of Civilization initially processed and reviewed the photos using a pixel scanner and a default color spectrum analysis. He agreed that there may be different 'deer' by different people and/or times.

The artist may have lived during the Mississippian Period between A.D. 1000 and 1600 and used a paint based on a prehistoric recipe in which the main ingredient was pulverized clay. That determination is currently being researched by Jan Simek, a University of Tennessee (UT) anthropology professor and acting president, who specializes in pictographs.

Simek and his assistant, Ann Blankenship, visited the site in May. Using a scalpel, Blankenship chipped off tiny samples of the pigment and took them back to UT for high-level chemical analysis. The tests will reveal whether modern paint trace elements, such as lead or zinc, are present. Simek's observations were that the depictions appear genuine and are very similar to those at other sites he has studied.

Simek's credentials are impressive. The Knoxville News reported that for the last 16 years, he has surveyed prehistoric rock art throughout the Southeast, including documenting the first-known

*(From left to right)  
Davie Ransdell,  
Rose Moore and Bill  
Huser, staff within  
the Critical Resources  
Review Section of  
the Division of Mine  
Permits, inspected  
and documented the  
pictographs that may  
be hundreds of years  
old.*

*Photo by Barry  
Glass, DMRE*



prehistoric cave art  
in North America

between Knoxville and Chattanooga. Since then, he and his research team have discovered prehistoric rock art inside 48 Tennessee caves and 39 open-air sites similar to this one in Kentucky.

According to Simek, virtually all known examples of open-air pictographs found in the Southeast are painted red. The color red as used among southeastern native groups is usually associated with life, birth and the "upper world." This would also be consistent with the pictographs of Paint Lick Mountain in Virginia and the documentary account of pictographs recorded by early settlers near Paintsville, Ky.

Pictographs on some sandstone surfaces are quite durable. The pigment can seep into microscopic pores thus becoming part of the rock. Rain can leach minerals such as calcium carbonate, out of the rock and deposit it on the surface providing another layer above the painting. In this way, pictographs can be preserved for hundreds of years.

Cultural factors typically influenced the choice for the location of rock art as well as what was depicted. The site is located on a ridge in the upper reaches of a watershed, between the heads of two drainages. This elevated and highly visible location would indicate that the pictographs may have been associated with communal ceremonies or vision quests. Although there are many possibilities as to what the symbols meant, it may simply have been a way to communicate the obvi-

ous, "Fat Deer Here!"

This find is only the fifth known pictograph site to have been reported in Kentucky. Of the archaeologists contacted thus far, the consensus is that it is worthy of protection. Because of the rarity of the pictographs, the site's good condition, and the potential for important contributions to knowledge about the prehistory of Kentucky, once the authentication process is completed and verified, it will be eligible for inclusion in the National Register of Historic Places.

The coal companies, landowner, engineers and Division of Mine Permits agree that this site requires protection, both during the current determination phase and in the future should it be authenticated. From the mining perspective, that would include buffer zones and other limitations to protect it from blasting and subsidence. The coal companies are working diligently to ensure the area is protected.

Until recently, access to the site was limited. But that has changed by improved roads used to access nearby gas wells as well as evidence of litter indicating that activity has increased. The gas company has been contacted and is eager to assist in trying to protect this site. However, one of the greatest protections we can offer is limiting the knowledge of its exact location. By keeping these fragile sites in the public eye only through pictures and documentation, we may be able to protect them and preserve a part of our Kentucky heritage for generations to come.



# Brown Hotel and Army depot are environmental leaders

Continued from Page 8

The **Blue Grass Army Depot (BGAD) in Richmond** is a master member of KY EXCEL and has four main projects. One of those projects is partnering with the Kentucky Department of Fish and Wildlife Resources to conduct three youth hunts during 2009, to promote safe hunting and manage the carrying capacity of the land (the population-to-resources ratio). The goal is to train 200 youth hunters between the ages of 10 and 15, with one dove mentor hunt, one youth turkey hunt and one youth deer hunt. Parents and their children are welcome to hunt together.

“The deer and turkey populations here are a problem, so we try to keep the deer herd between 700 to 800 head and the turkey population around 400 to 500. Also, we wanted to provide a quality hunting program for the area youth,” explains Alan Colwell, natural resources specialist at BGAD. “The hunting safety class is open to the public, and each hunter must have a hunter education card to hunt.”

Promoting the habitat of several species of concern is another project for BGAD. To provide nesting and habitat for several species of birds, BGAD has conducted prescribed burning on 700 acres of land to reduce tall fescue and to promote and enhance the growth of native warm-season grasses. These native grasses, which can grow to 7 feet in height, or 5 feet during a drought, will produce high-protein food for deer and other animals. During the burns in February and March, there are also two classes in basic and advanced firefighting that are also conducted to train firefighters.

Another project at BGAD is the restoration of warm season grass habitat, which is important to many grassland birds, such as Prairie warbler. Several bird species that are of conservation concern are found on the BGAD. Grasslands on the depot support several rare species, including the Short-eared owl, grasshopper sparrow and Henslow’s sparrow. The focus of the restoration includes little bluestem, a grass that improves habitat diversity. The population of Bobwhite quail, in particular, increases where little bluestem occurs. The BGAD is one of eight sites in the state



*Matt Colwell participated in the youth hunt at BGAD to help manage the wildlife population on the property.* Photo by Blue Grass Army Depot

where the Department of Fish and Wildlife Resources has worked to restore the quail population, which has been a successful venture.

Other efforts by BGAD to protect the environment include placing cattle in certain areas to graze, thus keeping the grass down and preventing wildfires. However, the cattle are kept out of the streams to ensure the water stays clean. Over the past eight years, nearly 2 million trees have been planted near streams and in larger areas. In addition to the prescribed burning, part of the tree planting is to aid in the recovery of the federally endangered species Running Buffalo Clover, with assistance from the U.S. Fish and Wildlife Service in Frankfort.

The BGAD offers support to the Madison County Historical Society by providing artifacts and docent services to the Battle of Richmond Association and educational display and lectures to elementary school students. Nathan White, the BGAD cultural resource manager, says part of the battle site is in the administration area of the U.S. Army property, with areas on and off the BGAD having been listed on the National Historical Register. Located where some of the heaviest battle action

occurred, the Rogers house, built in 1811 and donated by the U.S. Army to Madison County, was refurbished and made into a Civil War museum and visitor’s center. At one time, this battlefield had been listed as one of the 10 most endangered battlefield sites in the nation.

White represented BGAD during the USDA Forest Service’s Living Archaeology Weekend at the Red River Gorge and provided support in educational activities. White also assisted Eastern Kentucky University’s (EKU) 2008 field school in archaeology at the Broaddus Site, a Middle Fort Ancient Village located on the BGAD property. He assisted Dr. Kelli Carmean from ECU in her ongoing research at the site and in training undergraduates in archaeological method and theory.

Another BGAD project is conforming to the ISO 14001 Environmental Management System by Sept. 30, 2009.

“There was metal lying around the depot, so we decided to clean it up, decontaminate and recycle what we could,” says Stephen W. Van Dyke, environmental protection specialist at BGAD. “In the past 18 months, one ISO 14001 team recycled more than 300,000 pounds of steel, copper, aluminum and lead. Over the past year, 3 million pounds of scrap metal have been recycled. The proceeds of the non-munitions list items are split between the contractor who hauls the metal away, the depot’s Morale, Welfare and Recreation Recycling Branch (MWR) and the depot.”

The depot’s Qualified Recycling Program collects, segregates and processes traditional recyclable items, such as scrap metal, paper, plastic, aluminum, wood, motor oil, rags or textiles, cardboard and food wastes. The program also handles the recycling of nontraditional items, including munitions list items.

Launched in 2006, KY EXCEL is a voluntary program open to any individual, organization, community or business to improve and protect Kentucky’s environment above and beyond the state’s environmental requirements. To learn more, visit [www.KYEXCEL.ky.gov](http://www.KYEXCEL.ky.gov) or call the Division of Compliance Assistance at 800-926-8111.

# Monticello business looks to agency for compliance help

By Mary Jo Harrod  
Division of Compliance Assistance

Jared Perdue, general manager of Monticello Flooring & Lumber Co. Inc., thought his company was meeting its environmental obligations until a representative from the London Regional Division for Air Quality paid a routine visit to the facility and found a problem. When Perdue's grandfather, G.F. "Pete" Perdue, purchased the company in 1971, the boiler being used had been there since 1952 and required no opacity testing, recordkeeping or reporting to the Division for Air Quality. Monticello produces red oak, white oak, hard maple, hickory, walnut and cherry strip and plank flooring.

Due to the recent installation of a new boiler, Monticello received a new air quality permit, but did not realize that testing, as well as recordkeeping, would then be required. Small businesses, like Monticello, often make the same mistake in thinking that their boiler permit issued by the Department of Housing, Buildings and Construction is the same as an air quality permit issued by the Division for Air Quality.

David Shivel, a representative from the Division for Air Quality, recommended that the company contact the Division of Compliance Assistance (DCA) for help, which Perdue did.

Over the phone, DCA's Kenya Stump went through Monticello's permit with Perdue and explained it in layman terms, helped him develop a recordkeeping system and assisted him with his annual compliance report and semiannual report. In relation to the emissions test, Stump

provided Perdue with the appropriate forms to properly notify the Division for Air Quality of the test. As part of their permitting obligations, Monticello Flooring conducted and passed the emissions test, but the company was still fined several thousand dollars for failing to conduct the test within the allotted time frame, as well as not complying with notification, recordkeeping and reporting obligations contained within the new permit. However, with DCA's assistance the company was able to return to compliance very quickly.

"Kenya Stump was a big help. We were collecting emissions information, but didn't realize that it had to be put into a report. I'm a lumber guy, not a lawyer," explains Perdue, whose company sells its products to domestic and foreign markets. "It was very simple what we had to do, but who [small business owner] sits down to actually read, interpret and understand a 60-page document [permit]?"

Perdue suggests that permits be made easier to understand by having a paragraph or two at the beginning of the document that is written in layman's language and specify exactly what is required of the permit holder.



**ABOVE:** Jared Purdue, general manager of Monticello Flooring, stands in the company warehouse. **LEFT:** The boiler system used by Monticello Flooring where wood flooring planks are produced. Photos by Mary Jo Harrod

"Recently, the EPA has proposed and finalized more regulations that apply to combustion sources and businesses or entities that have boilers, generators or furnaces may now require an air quality permit," says Stump.

A registration or permit is needed for the installation and usage of equipment that produces air emissions, and it is the responsibility of each business owner to check or ask what permits are needed. DCA offers help with emission calculations, application preparation, regulations review, application facilitation with the Division for Air Quality and recordkeeping and reporting assistance.

"I can't imagine what people would do without DCA," says Perdue. "It's nice to know that I can pick up the phone or e-mail for help."

The Division of Compliance Assistance is available to assist businesses or entities whenever they have questions about what the law requires of them. Contact 800-926-8111 for more information or visit [www.dca.ky.gov](http://www.dca.ky.gov).



# Green talent

Students inspired by the environment create original artwork

By Mary Jo Harrod  
Division of Compliance Assistance

The Department for Environmental Protection (DEP) held its first annual “Green Art” contest for high school environmental artists and selected six winning entries. The contest themes were pollution prevention, conservation and environmental protection, and the purpose of the contest was to encourage high school students to think about the environment and inspire them to include the environment in their artwork. Winning entries will be displayed in the DEP training center at 300 Fair Oaks Lane, and the winners will receive free registration to the Governor’s Conference on the Environment this fall.



**TOP:** Rachael Ballard is congratulated by DEP Commissioner Bruce Scott for her art on recycled wood. **ABOVE:** Hannah Williams and Commissioner Scott stand beside her 5-foot creation made from recycled materials. Photos provided by DEP

**Winner in sculpture**  
Using the pollution prevention theme, **Hannah Williams**, from Cumberland County High School, created a person standing more than 5 feet tall, made entirely from recycled materials. Hannah used old chicken wire, used plastic bags, old clothes, leftover green paint, an old door and a cloth tote bag for her artwork. Hannah says, “My sculpture shows a person using a cloth bag instead of relying on plastic. I hope it sends the message to all who view it to use cloth bags and do our part to help prevent pollution.”

**Winners in chair painting (tie)**  
**Brandi Estes**, a student from North Bullitt High School, created a painting of a Louisville bridge at sunset on a chair for the conservation theme. Brandi explains, “I decided to paint this because I live in Louisville and it’s different. I used an old

chair to paint my scene on, and it has a lot of colors to make the backgrounds stand out.”

North Bullitt High School student **Adam Potter** used the conservation theme with his oil painting of wolves on a chair. “It is a Kentucky winter scene with wolves on the seat and back. There are twigs on the legs to add more of a nature touch. Wolves are no longer indigenous to this area, but they inspired me to paint,” says Adam.

### Winner in photography

**Hannah Baird**, from Ohio County High School, submitted a photograph demonstrating an environmental protection theme. “My artwork, ‘Starting Out,’ portrays the delicacy of all life,” she says. “The human hand holding the plant symbolizes how our population needs to act as a guardian to the Earth. It also demonstrates how human and plant life are so intimately connected.”

### Winner in painting

Leslie County High School student **Carrie Adams** created a painting of eight scenes about saving the planet. It is a balance between environmental challenges and opportunities. “I did this artwork to show the good and bad things we are doing and what we have that we need to protect on our planet,” Carrie says.

### Winner in recycled wood

**Rachael Ballard**, from North Bullitt High School, painted a landscape, using the conservation theme, on a piece of recycled wood. “When I chose to use the wood, it was a very large piece that was broken,” she explains. “But I saw it and thought anything is possible. I saw great meaning in this piece of wood—movement, running water and a beautiful sunset.”

# Awards

## Water treatment plants receive state recognition

By Allison Fleck  
Division of Water

Thirty-one water treatment plants in Kentucky received awards from the Energy and Environment Cabinet in March in recognition of their demonstrated success in producing drinking water in 2008 that consistently met or exceeded state water quality standards.

The 31 were among 155 public and private water treatment plants in the state that participated in the U.S. Environmental Protection Agency's Area-Wide Optimization Program (AWOP), which challenges plants to reduce turbidity levels below those required by state and federal regulations. Turbidity, or cloudiness of water, can be caused by sand and dirt, as well as bacteria and viruses. Particle removal is critical for producing water that is free from dirt and microbes that can cause waterborne diseases.

Dr. Len Peters, secretary of the Energy and Environment Cabinet, presented the awards during the 2009 Kentucky Water and Wastewater Operators' Association annual conference. Peters praised all the water plants for their achievements.

"Together, these 31 systems serve more than a million Kentuckians who can be assured that their water treatment systems are working hard to produce safe drinking water from Kentucky's lakes, rivers and reservoirs," said Dr. Peters. "I fully expect to present many more awards next year as water systems continue to make technical, managerial



**LEFT:** Shaun Youravich (center) of the Hardin County Water District No. 2 receives an AWOP Champion Award from Dr. Len Peters (left), secretary of the Energy and Environment Cabinet, and Jimmy Allen, in-coming chair for the Kentucky Water and Wastewater Operators Association.

**BELOW LEFT:** Cliff Hayes with Jackson Municipal Water received an AWOP Champion Award.

**BELOW RIGHT:** Members of the utilities accept their awards for meeting or exceeding water quality standards. Photos by Mary Evans, Paducah Water Works



and financial improvements in the business of producing clean, safe water for the citizens of the Commonwealth."

Two of the water systems received an AWOP Champion Award, which takes into account the number of years the system has been optimized as well as the dedication of the operating staff. For 2008, Hardin County Water District No. 2 won in the category for large population served (more than 10,000 customers) and Jackson Municipal Water Works for small population served (fewer than 10,000 customers).

Five plants—Benham Water Plant, Hardin County Water District No. 2, McCreary County Water District/Cum-



berland River Water Treatment Plant, Rattlesnake Ridge Water District in Grayson and Wood Creek Water District in London—also received special recognition for achieving the optimized water quality goals 100 percent of the time during 2008.

Water systems recognized for meeting those goals 95 percent of the time during 2008 include Ashland Water Works, Barbourville Water and Sewer, Booneville, Burnside Water Co., Cave Run Regional Water Commission, Glasgow Water Co./Barren River Water Treatment Plant, Green River Valley Water District, Greensburg Water Works, Greenup Water

System, Hardin County Water District No. 1, Irvine and Jackson Municipal Water Works, Kentucky-American Water/Richmond Road in Lexington, Lawrenceburg Water and Sewer Department, Leitchfield Water Works, Logan-Todd Regional Water Commission, London Utilities Commission, Martin County Water District, Morehead Utility Plant Board, Northern Kentucky Water District/Memorial Parkway Water Treatment Plant, Northpoint Training Center in Danville, Paducah Water Works, Pinville Water System, Richmond Utilities, West Liberty Water Co. and Wilmore Water Works.



## Annual contest teaches students about conservation

By Kimberly Richardson  
Division of Conservation

Do you remember drawing a poster or writing an essay on conservation when you were in school? Chances are you do.

Each year the Jim Claypool Art and Conservation Writing contest, sponsored by the Kentucky Association of Conservation Districts and Kentucky Farm Bureau, captures the attention of teachers who want to educate their students about conservation topics. Last year, teachers shared the contest theme “Working Trees: Kentucky’s Renewable Future” with 40,267 students who completed art entries and 14,517 students who completed writing entries.

The students’ art and writing entries are judged on the county level by conservation district supervisors, local Farm Bureau members and local county officials. A winning student from each county is chosen to go to the state level. Their

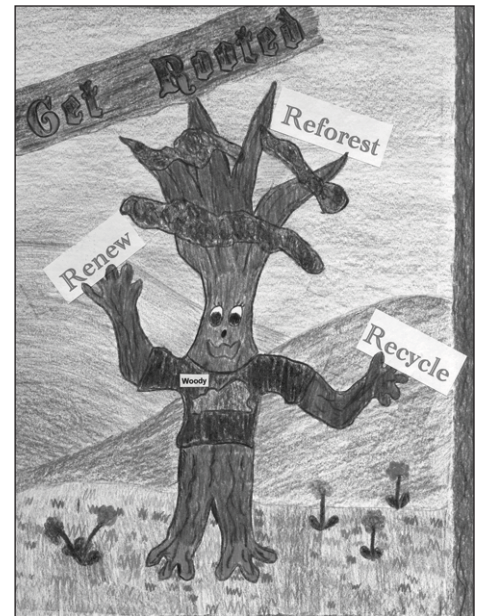
masterpieces are then reviewed by a panel of judges with various environmental backgrounds. State, area and county winners receive U.S. savings bonds sponsored by the Kentucky Farm Bureau.

Jim Claypool Art Contest winners are:

- First place: Reed Skelton, Henderson County.
- Second place: Casey Welch, Bourbon County.
- Third place: Mikie Dillon, Pike County.

Conservation Writing Contest winners are:

- First place: Shea Jennings, Jefferson County.
- Second place: Ruth M. Myers, Campbell County.
- Third place: Natalie Orms, Boyle County.



State 1st-place winning poster drawn by Reed Skelton, Henderson County. Reed is a 5th grader at East Heights Elementary. Photo submitted

## Stewardship in Kentucky *Continued from Page 2*

### *Utilizing the Resource*

Self-sufficiency is perhaps the most interesting aspect of life on the Stickney farm. Stickney has built a cabin, a barn, a dry kiln, numerous nesting boxes for wildlife and raised beds for organic gardening out of the timber resources on his property. Stickney, along with his wife, Teresa, and son, Caleb also ventured into farming one of Kentucky’s upcoming alternative crops—shiitake mushrooms.

“Farming log-grown shiitake mushrooms in shaded, moist woodlands has great potential for Kentucky,” said Stickney. Shiitake mushrooms are a nontimber forest product that can provide additional income for a small farm with plentiful woodlands. Stickney raises the mushrooms for personal use as well as to sell to local restaurants and farmer’s markets. The mushrooms are cultivated on small

diameter hardwood logs that are left over from cutting and thinning cull trees while doing TSI on his woodlands.

### *Enterprising with MACED*

The newest venture for Stickney has been enrolling as the first landowner in the new carbon credit program administered by Mountain Association for Community Economic Development (MACED). The basis for the program is that trees naturally remove carbon dioxide from the atmosphere and help reduce greenhouse gases. Stickney hopes to add value to his woodlands by receiving payments for the carbon stored in the trees on his property. MACED’s program is aimed at landowners who have a management plan and inventory of their forest. The program requires limited logging of higher quality timber, and therefore, benefits forest health.

### *Looking Forward*

The Stickneys have hosted field days and tours on their farm in an effort to educate other landowners about sustainable farming and forestry, and the land will be a legacy for anyone interested in conservation. Stickney’s 9-year-old son is proof and testament. Caleb recently found several American chestnuts sprouting along a steep slope on the farm. There is little doubt that good stewardship will be a part of this farm for many years to come.

Forest landowners are critical to sustaining our woodlands. Nearly half of the land in Kentucky is forested, and private landowners manage the majority of these forests—89 percent to be exact. This is why KDF foresters are committed to providing forest management advice and recognizing landowners like Stickney, who are proven “outstanding stewards.”



**Energy and Environment Cabinet**  
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## Woodcock and Godbold named Tree Farm Inspectors of the Year

**By Lynn Brammer**  
**Division of Forestry**

Connie Woodcock and Sean Godbold were recently honored as 2008 Kentucky Tree Farm Inspectors of the Year at the Kentucky Forest Industries Association annual meeting in Lexington.

Woodcock and Godbold are foresters for the Kentucky Division of Forestry. Both have helped advance forest management through their work with private landowners and the Kentucky Tree Farm program, which recognizes and certifies landowners for practicing sustainable forestry.

Woodcock (Southcentral District) and Godbold (Eastern District) each completed four new tree farm inspections and tied for the inspector award. Each forester inspected properties to ensure the landowners are practicing sustainable forestry under the established standards and guidelines of the national Tree Farm program. Once a farm has passed the inspection it becomes a Certified Tree Farm. After certification, the landowner receives a Tree Farm sign to place on his/her property. To maintain certification, landowners must implement a management plan based on strict environmental standards and pass an inspection every five years.

Kentucky has more than 800 certified tree farms owned by private woodland owners who manage their forests for a wide range of environmental, economic and social benefits. Tree farmers share a unique commitment to protect wildlife habitat and



*Kentucky Tree Farm Committee Vice Chair Cary Perkins (left) stands with Connie Woodcock and Sean Godbold.*  
Division of Forestry photo

watersheds, to conserve soil and to provide recreation for their communities while producing wood for America. These individuals hold the key to sustaining our forests.

Landowners who wish to become involved in the program should contact the division's district office serving their county. For more information, visit the Kentucky Division of Forestry's Web site [www.forestry.ky.gov](http://www.forestry.ky.gov) or call 1-800-866-0555.