



DEP celebrates 45th Earth Day with interactive displays at Clay Center

by Jake Glance

More than 300 students from four counties had a hands-on experience with West Virginia wildlife during the 45th observance of Earth Day April 22 at the Clay Center.

With educational displays focusing on energy efficiency, aquatic life, different kinds of snakes, and acid mine drainage, it was an opportunity to show the diversity of West Virginia's environment and the challenges to preserve it for future generations.

Mike Rowe, an engineer in the Division of Air Quality, built several energy efficiency displays that were showcased at Earth Day. The displays are meant to show children how important — and how easy — it is to be energy efficient.



Mike Rowe shows a student how much less energy is required to power an LED lightbulb.

"Kids are much more apt to embrace the idea of energy efficiency than adults are,"

Mike said. "If we can expose them to it at an early age, it becomes commonplace to them. They won't give any thought to going and buying an LED lightbulb. They will think, 'why can't I put solar panels on my roof?' They will be thinking about energy efficiency in a whole new way. It is a great lesson."

Nick Murray, an environmental resource specialist supervisor in the Watershed Assessment Branch, said the best way to teach children about West Virginia wildlife such as salamanders and turtles is to see them close up, and in some cases hold the animals.

"The most important thing is keeping the kids active and interested in the health of our streams," Nick said. "As long as you keep the children active you can maintain that passion."



Nick Murray helps a student pick up a crayfish at the Earth Day celebration on April 22.

see **EARTH DAY**, Page 6

Mobile aquarium highlights state's underwater world

by Jake Glance

Most people already know about West Virginia's breathtaking mountaintop views, but soon they'll also get a close-up look at our state's fascinating underwater world.

The DEP's 1,700-gallon freshwater mobile aquarium will make its debut in Charleston at the Trail of Dreams bass fishing tournament on May 9. Some bass caught during the event will be placed in the tank at around 4 p.m., after the fish are weighed in.

The aquarium's body was built by Preston Machine, the water system was built by AquaFix, and the lettering was done by Affordable Signs — all businesses located in West Virginia. When full, the \$75,000 aquarium will weigh in at more than 25,000 pounds.

During events, the aquarium will be stocked with fish that fill our waterways. After each event, the aquarium will be drained and the fish will be returned to the stream or hatchery from which they came.



see **AQUARIUM**, Page 6

DWWM's Rain Barrel Project a huge success

by Jake Glance

You know you're doing something right when your workshops fill up and people are asking you - or more accurately, *begging you* - to add more events so they can sign up.

That's the conundrum facing Tomi Bergstrom, an environmental resources specialist in the Division of Water and Waste Management. Tomi is leading the Rain Barrel Project, which had all five of its scheduled workshops fill up in a matter of days.

The goal of the Rain Barrel Workshops is to promote the idea of catching rainwater, storing it, and using it later for activities such as watering lawns and flowers. Tomi said other benefits of using a barrel to catch rainwater include reducing stress on sewage systems, protecting local waterways, and the knowledge that you are a good steward of the environment.

Oh, and one more thing: the rainwater is free — so your water bill will be lower.

Five Rain Barrel Workshops were scheduled — three at DEP headquarters in Kanawha City and two at the Capitol Market in Charleston. The workshops cost \$10, and that included the cost of the barrel and the kit that goes along with it.

"I hope people go back to their community and tell their neighbors that they installed a rain barrel, and that it really reduces that initial flush of contaminants that enter storm drains," Tomi said.

see **RAIN BARREL**, Page 6

Youngsters learn about DEP, parents' job on "Take Your Son or Daughter To Work Day"

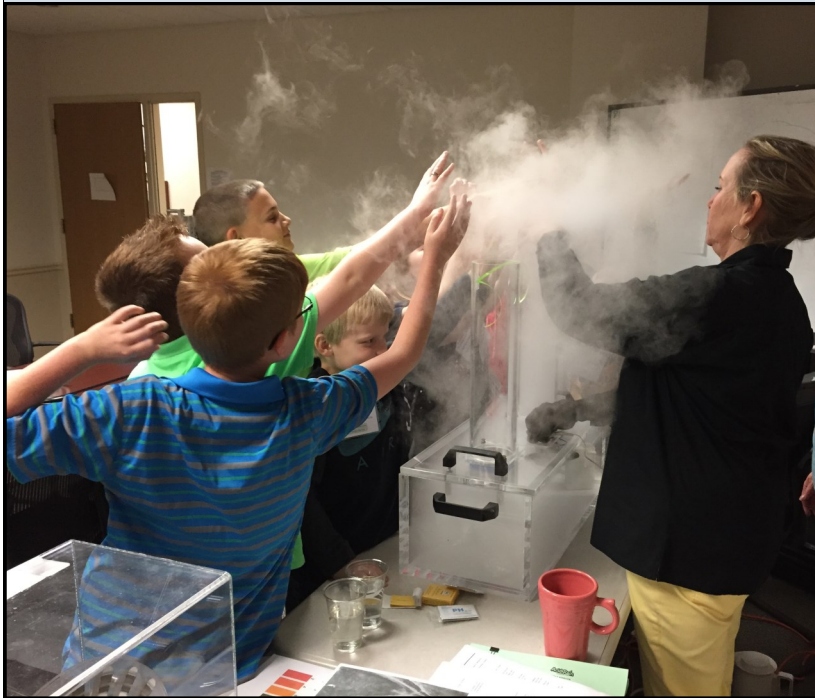
by Jake Glance

CHARLESTON, W. Va. - More than three dozen youngsters attended "Take Your Son or Daughter To Work Day" on April 23, learning all about the DEP's mission and the work their moms and dads do to promote a healthy environment.

Interactive displays taught children how to test the pH of water, the wide diversity of our woodlands, and the importance of recycling.



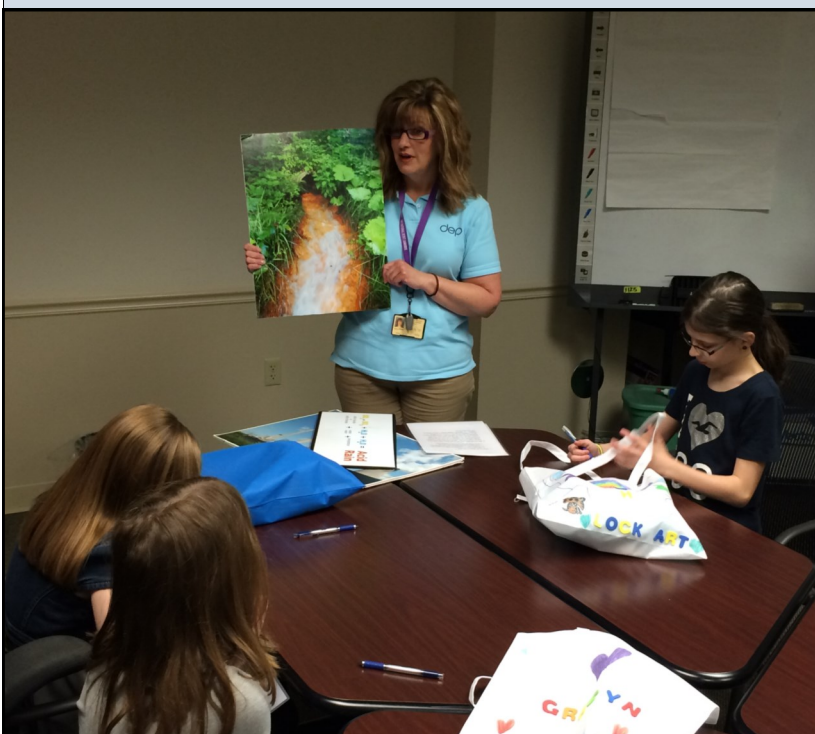
After a short greeting, children were split into age groups and got a hands-on education about the DEP.



With the Office of Air Quality, children learn the impact of air pollution.



Dylan Neal learns how to determine the pH of a water sample.



Stephanie Hammond, an outreach manager in the Division of Air Quality, shows children a picture of the impact acid rain can have on West Virginia's streams.



Abigail Moore and Mea Billups play a game that highlights all of the animals that live in the mountains of West Virginia.

Have a story idea? [Share it here!](#)

How it works: dye testing mine runoff

by Jake Glance



Environmental Resource Analyst Dennis Stottlemyer ties absorbent traps to a log in Island Creek.

OMAR, W.Va. - How does DEP find out if water that's flooding the basements and yards of residents is coming from an abandoned mine?

The solution is simple. And in this case, pink.

On April 13, DEP conducted dye testing in Omar, Logan County to determine the source of standing water in the yards and basements of residents. This round of dye testing in Omar is the second since 2013; water quality analysis has also been conducted in the area.

To conduct the dye testing, absorbent traps are first placed at several points in the area experiencing flooding. Next, a few cups of concentrated non-toxic dye are poured in the water suspected of causing the flooding. The traps are allowed to soak for varying amounts of time to let the dyed water to work its way through the area. The traps are collected and tested to see if they contain any dye.

Dennis Stottlemyer of the Office of the Environmental Advocate said the most important part of dye testing is avoiding cross contamination of samples.

"You have to make sure the sample being taken from a particular area isn't contaminated by a sample taken from another area," he said. "The whole point of dye testing is to find

out where the dye turns up, how concentrated it is, and how long it took for the dye to turn up."

Travis Parsons and Jamie Hopen of the Office of Abandoned Mine Lands and Reclamation logged GPS coordinates of the absorbent traps, the time the dye was put into the water, and the time the dye was first visible in the water in the area below the point where it was poured into the mine drainage.

The dye testing conducted in Omar is the same process conducted in Hughes Creek in Kanawha County in March. Residents there voluntarily evacuated their homes for one night as a safety precaution due to concerns that an old mine that was discharging more water than usual could blow out. While the cause of the additional discharge is believed to be related to excessive rain, the agency is still investigating whether there were any other contributing factors.

The DEP conducted water quality analysis in the Omar area in 2011, and no connection was found between mine drainage and the water present in resident's yards and basements. An independent contractor came to the same conclusion in 2013 after performing dye testing. Residents of Omar requested this round of dye testing through the DEP's Office of the Environmental Advocate.



Travis Parsons, an environmental resources program manager, pours the pink dye in the water suspected of being the source of flooding in Omar, Logan County.



The dye turned the mine drainage bright pink.

Stay Connected!

Are you the type of person who checks Facebook 10 or more times per day?

Do you get excited when one of your followers retweets you?

If you answered yes to either (or both) of those questions, you should be following the DEP and several of its divisions on social media!

Here's where you can find DEP on social media:

- [CLICK HERE](#) to follow the DEP's YouTube channel.

- [CLICK HERE](#) to follow the DEP on Twitter.

- [CLICK HERE](#) to follow the DEP on Google+.

- [CLICK HERE](#) to follow Adopt-A-Highway on Facebook.

- [CLICK HERE](#) to follow WV Project WET on Facebook.

- [CLICK HERE](#) to follow WV Nonpoint Source Program on Facebook.

- [CLICK HERE](#) to follow the Youth Environmental Program on Facebook.

Robot design team helps teens reach full potential

by Colleen O'Neill

If the DEP had a reincarnation of Thomas Edison, it would be Mike Rowe.

Mike, a member of the Division of Air Quality (DAQ) outreach team and master inventor of its many cool displays, also works with the Charleston Area Robotics Team (CART). CART is a community-based team of students grades seven through 12. Working together, these young adults fashion a robot from conception and design through construction and programming.

"The team competes in the FIRST — For Inspiration and Recognition of Science and Technology — Tech Challenge," Mike said.

He is one of four Department of Environmental Protection employee mentors, and each has a specific area of expertise.

"We provide guidance and try to keep them on task so the robot gets built in time for testing and competition. Ed Andrews (DAQ engineer) and I work with them on mechanical design and function, and Laura Crowder (DAQ assistant director of Planning) works with them on documenting the design, construction, and lessons learned each week. Reggie Suplido, who works for the Business and Technology Office, is the programming mentor."

Each year, the team competes in state and local tournaments. Other possibilities for competition include the regional and world championships. In January, the team competed in the Southeastern Pennsylvania Qualifying Tournament in York, Pennsylvania. In March, the team competed in the West Virginia State Championship in

Chapmanville. In both tournaments, the team made it to the semifinals.

The team not only competes, it also has partnered with DAQ to help with its outreach efforts. The students constructed a burn barrel robot that they use to promote the team and robotics, while helping the DAQ spread the message about why open burning of trash is illegal. They have taken the burn barrel robot to events such as Youth Environmental Day at North Bend State Park, the state Capitol for DEP Day at the Legislature, and Discover Engineering Day at the Clay Center.

But the whole experience is so much more than just a competition. The appeal lies in the fact that everyone and anyone is welcome to join and use their skillset to contribute.

"We want to help the kids grow, learn skills, and help them see something through, from conception to completion," Mike said. "I remember how one student went from shy and quiet to a team leader two years later. We like seeing them realize some of their potential."

Anyone who is interested in joining the team or learning more can visit their website at www.cartwv.org.



Agency wellness: Substitute a glass of water for a sugar-filled drink every day

by Jake Glance

What if someone told you there was a miracle drink that speeds up your metabolism, cushions your joints, helps to maintain your body temperature, and helps to cleanse your body of waste?

And what if someone told you that miracle drink had zero calories and was available free of charge?

You guessed it — that miracle drink is water.

Kerry Gabbert, a health promotion consultant, recently visited DEP headquarters in Charleston to urge people to every day substitute a sugary drink with one 8-ounce cup of water. Sugary drinks include common ones like regular and diet soda, sweetened tea, energy drinks, and fruit drinks. But several other drinks — like sweetened coffee and flavored milk — also contain large amounts of sugar.

“You should always read the labels,” Kerry said. “You might be surprised at how much sugar is contained in a beverage. And pay close attention to how many servings are in a bottle. Labels list sugar content per serving, but some bottles contain two or three servings. So you may be drinking a lot more sugar than you think.”

Sugar calories are empty calories, meaning they contain no nutritional value. Kerry said most people consume three to four times the amount of added sugar — or sugar that isn’t contained in foods such as fruit — that is recommended. She said to calculate how many teaspoons of sugar are in a drink, divide the grams of sugar by four. For example, a drink containing 20 grams of sugar is equivalent to 5 teaspoons of sugar. Each teaspoon of sugar contains 16 calories.

Men should get a total of 13 8-ounce cups of fluid per day, Kerry said, but water contained in foods like fruit can be counted toward a daily total. Women should get nine cups of water, she added.

Smartphone apps such as “Waterlogged” and “Water Your Body” are available to help track water intake. Kerry also recommended simply setting an alert on your phone reminding you to drink more water throughout the day.



State government has a lot of agencies that are known mainly by an acronym: DEP, DHHR, and AG are just a few examples.

But, does any state agency have more acronyms than the DEP? With 21 different divisions covering everything from water quality to homeland security, DEP employees are surrounded by letters.

How well do you know your acronyms? Take this short quiz to find out! Answers are on the last page of the newsletter.



A _____ Mine L _____
and R _____.



R _____ E _____
Action P _____.



Division of W _____ and W _____
M _____.



Health consultant Kerry Gabbert said substituting one sugary drink per day with water is an easy way to lower your risk of diabetes and cardiovascular disease.

Memorial Day is a time to honor ultimate sacrifice

by Colleen O’Neill

Memorial Day is a day set aside to remember those who died while in service to the United States of America. Now a national observance on the last Monday in May, it wasn’t until Congress passed the National Holiday Act of 1971 that everyone banded together to honor the men and women who gave their lives to defend our nation.

It all began in 1868, when Gen. John A. Logan, a leader of the Northern Civil War veterans, declared May 30 a day to decorate the graves of soldiers who had been killed in the Civil War. Called Decoration Day, it was observed by many states on many different days. Although this day honored both northern and southern soldiers who had been killed during the war, many southern states chose to honor the confederate dead on separate days until after World War I.

An interesting tidbit about this day is its association with red poppies. This came about when, in 1918, Moina Michael, a YWCA worker, was inspired by the poem, “In Flanders Fields,” written by Lt. Col. John McCrae of the Canadian Expeditionary Force. Embracing the description of red poppies among the soldiers’ graves, she wore a red silk poppy pinned to her coat when she attended the YWCA Overseas War Secretaries conference.

In 1920, the National American Legion adopted the red poppy as its official symbol of remembrance. Getting in on the celebration, in 1948 the U.S. Post Office honored Ms. Michael for her role in founding the national poppy movement by issuing a red 3-cent postage stamp with her likeness on it.



Thousands adopt high-ways, make WV shine

by Jake Glance



The spring tradition of the Adopt-A-Highway and Make It Shine programs continued this year, with thousands of volunteers across West Virginia helping to keep our environment clean.

The Adopt-A-Highway program had more than 4,400 participants in 54 counties in the annual spring cleanup.

Those volunteers cleaned up hundreds of miles of West Virginia’s roadways.

The Make It Shine program had nearly 4,100 volunteers picking up litter along roads and riverbanks.



Gettin' in depth with GEOLOGY

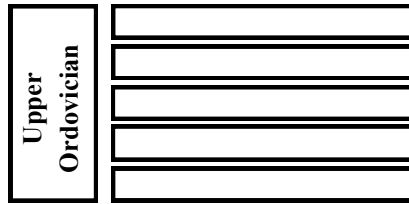
West Virginia has some of the most fascinating geology in the world, with rock formations that tell the tale of millions of years of Earth's history.

The DEP has many geologists who have devoted their life's work to understanding this tale, and who know how each layer of rock formed.

In this month's newsletter, the focus is on the geology of western West Virginia and rock layers that formed in the Ordovician Period — between 485 and 443 million years ago.

Can you put these rock formations in order? The oldest should be on the bottom and the youngest will be on the top (so says the Law of Superposition).

Included in this period of time is the rock formation known as the "Utica Shale," which is approximately 9,000-10,000 feet underground — many times deeper than the Marcellus Shale formation. Utica Shale produces natural gas and DEP works with gas companies to regulate drilling permits and environmental impact.



Put the following rock formations in order from oldest to youngest, with the oldest being on the bottom (answers on page 6):

- A: "Black River Group," which is rich in fossils.
- B: "Trenton Formation," which is also rich in fossils.
- C: "Utica Shale," which produces natural gas.
- D: "Martinsburg Formation," which includes fossils of early eel-like creatures called conodonts.
- E: "Juniata Formation," which is a good source of rip-rap, large rocks that protect shores or drains from erosion.

Information in one stop – PIO's new media hub

These days, news organizations have to cover more ground with fewer resources, so it's rare that a reporter can spend an entire day or longer gathering elements for a single story. Sometimes good stories go unreported, or aren't produced to their full potential, because news crews don't have the time or budget.

A new project from the DEP's Public Information Office aims to fill that gap by providing media elements — broadcast-quality video, audio, still photos, and other materials — all from an easy-to-use central hub where reporters, producers and editors can preview and download material.

By creating a portal where this material can be downloaded, anyone in the state, or for that matter the world, can access it.

"What we want to do is be a partner to area journalists," said Mike Huff, Environment Matters executive producer and project lead. "We believe that many of the stories we produce for the TV show would be of interest to audiences beyond our current distribution channels. By providing not only the completed stories, but also all the building blocks — the raw interviews, B-roll, graphics, and stills — it could also serve as a jumping-off point for reporters or producers who have an interest and want to pursue the story on their own. High-definition video files are huge, much too large to email, so right now if TV stations want to use some of our video, we have to burn it to a disc or copy it to a jump drive and physically deliver it to them. By creating a portal where this material can be downloaded, anyone in the state, or for that matter the world, can access it, as long as they have an internet connection."

Another possible use for the website is to upload more in-depth video interviews or full packages on topics that educators can use in their classrooms.

Right now the project, to be called "Media on Demand," is still in the development stage, as members of the Public Information Office work with a team from the Business and Technology Office to design the site. The goal is to have it up and running by this fall.

Training and so much more

If you take a DEP training course, have a grievance, or are dealing with an Equal Employment Opportunity issue, you will see this smiling face. Monica Ashford is DEP's staff development specialist/grievance and EEO coordinator. Fairly new, she began in May 2014.



"I was looking for a job and it was listed on the DOP (Department of Personnel) website," Monica said..

Employees can be on the lookout for training being offered in Management/Leadership Skills, Communication skills both written and verbal, and Environmental related training.

"If anyone has a training suggestion, they should talk with me or Chad (Bailey, Human Resources manager)," Monica said. "We will either conduct training or find one currently being offered that matches what needs have been communicated."

Monica is not all work and no play. She plays in the evening after a hard day at work. And her play is teaching Zumba. What's Zumba?

"Zumba is dance-fitness that combines Latin rhythms and music along with International music," she said. "It's a great workout full of sweat and fun. I teach at First Baptist Church of Charleston every night. We are even going to start back our Saturday classes. It may sound like a lot but our classes bring the energy and we love what we do."

A neat fact? Monica teaches with her younger brother, who she got involved.

"My brother is a cancer survivor, and needed to start moving," she said. "This was a perfect opportunity, and I got to spend time with him."

She has been teaching Zumba since 2010. But what's the story?

"I got involved because the ladies at my church wanted to start an exercise class that everyone could participate in, regardless of their fitness level," Monica said. "So, I got licensed to teach and have been doing it ever since."



Earl Ray Tomblin
Governor
 Randy Huffman
Cabinet Secretary
 Kelley Gillenwater
Communications Director
 Jake Glance
Editor
 Public Information Office
 601 57th Street SE
 Charleston, WV 25304
 Email:
 Jacob.P.Glance@wv.gov

inDEPTH is published by the West Virginia Department of Environmental Protection, an affirmative action, equal opportunity employer

EARTH DAY

cont'd from Page 1

"When I was younger I was always out in the streams exploring and that love and appreciation continued on through my college years and even now."

The first Earth Day was celebrated in 1970 and is now observed in almost 200 countries.

The organizations who had display booths at the Earth Day event were the DEP Youth Environmental Program, DEP Watershed Assessment, DEP Nonpoint Source Program, DEP Rehabilitation Environmental Action Program, DEP Environmental Advocate's Office, DEP Homeland Security and Emergency Response, DEP Office of Air Quality, DEP Office of Abandoned Mine Lands and Reclamation, the Solid Waste Management Board, the West Virginia Division of Natural Resources, the West Virginia Division of Forestry, West Virginia American Water, Appalachian Power, the Ohio River Valley Water Sanitation Commission, and Three Rivers Avian Center.



DAQ putting pressure on drivers

by Jake Glance

Mike Egnor, an engineer with the Division of Air Quality (DAQ), says there is a quick and easy way to squeeze a few extra miles out of a tank of gas. And he's not just blowing hot air.

During Air Quality Awareness Week, members of the DAQ staff were busy checking the tire pressure on state vehicles and personal vehicles of DEP staff.

According to the U.S. Department of Energy, for every 1-pounds-per-square-inch drop in pressure, drivers can expect gas mileage to lower by 0.4 percent.

"The best time to check your pressure is now, when it's getting hot.



DAQ's Mike Egnor checks to make sure this tire is inflated to the proper pressure.

"You should also make sure your tires aren't overinflated, that could lead to a blowout," Mike said.

In addition to checking tire pressure, DAQ employees were also handing out free tire gauges.

AQUARIUM

cont'd from Page 1

Because many West Virginia fish prefer cooler water, the aquarium comes equipped with a chiller to keep the water at a comfortable temperature even on the hottest days. There is also a net covering to prevent the fish from jumping out.

"The aquarium is a great outreach tool because it is a very visual representation of the work we do. Each division or office within DEP provides services or guidance that positively impact the water quality of our state. The aquarium illustrates this by displaying fish that live in our healthy streams," said Brianna Hickman, a public information specialist helping plan the events.

The DEP is partnering with the Division of Natural Resources on several aquarium projects, so that agency's logo and website also appear on the back of the tank.

Several other events are scheduled for the mobile aquarium: Youth Environmental Day at North Bend State Park May 15-17, Junior Conservation Camp at Cedar Lakes June 15-17, National Hunting and Fishing Days at Stonewall Jackson Lake State Park Sept. 26-27. Other events are in the planning stages.

Other events are in the planning stages.



RAIN BARREL

cont'd from Page 1

Tomi hopes that will spur a conversation about other ways to protect the environment.

"Maybe you shouldn't apply so much fertilizer, maybe you could help pick up litter, clean up after your dog, that's the sort of thing that we want to extend into communities."

Attending a workshop isn't required to install a rain barrel and help protect the environment. Rain barrels and the kits can be found online for reasonable prices, and Tomi urges anyone interested in installing one to go online and start looking.

"The kits are available online at AquaBarrel.com. The one we use is called the universal part kit. You can use any barrel that you want, just make sure that it is sturdy enough to hold a lot of water. We do recommend the ones that have the screw top, because they are easier to clean and winterize."



This rain barrel project event at Capitol Market in Charleston was one of five sold-out events.



Recent Hires

- Jeremiah Carter, Division of Mining and Reclamation
- Christopher Dudek, Environmental Enforcement
- Teresa Grimmatt, Division of Mining and Reclamation
- Lonnie Mills, Office of Oil and Gas
- Autumn Lynn Pugh, Business and Technology Office
- Steven Rowe, Business and Technology Office
- Deanna Simms, Public Information Office

- Mark Mathias Smith, Environmental Enforcement
- Jody Lois Wilson, Division of Water and Waste Management

Retirements

- William Pack, Division of Land Restoration
- Mark Leo Slusarski, Division of Mining and Reclamation
- Sue Taylor, Business and Technology Office
- Billie Hatfield, Office of Oil and Gas

Acronym quiz answers: AMLR is Abandoned Mine Lands and Reclamation, REAP is Rehabilitation Environmental Action Plan, and DWM is the Division of Water and Waste Management. Geology quiz answers: A, B, C, D, E. The Black River Group is the oldest followed by the Trenton, Utica, Martinsburg, and the youngest is the Juniata.