

in depth

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Gov. Tomblin Delivers Final State of the State Address

Speech touches on CPP, coal and gas production

by Jake Glance

The 2016 Regular Session of the West Virginia Legislature began Jan. 13 with Gov. Earl Ray Tomblin's final State of the State Address.

Tomblin, a former state Senate president who was first elected governor in a special election in 2011 and then re-elected to a full term in 2012, touched on energy and budget issues

during his speech.

"Despite the difficult times we find ourselves in, West Virginia remains the fourth largest producer of electricity in the country, and I believe our coal industry will continue to support our families well into the future," the governor said.

"However, we cannot ignore the unprecedented shift that has taken place in our state and our nation. Forces beyond our control have severely damaged our coal industry, and even the most optimistic among us realize it is unlikely coal will ever reach production levels of the past."



Gov. Earl Ray Tomblin

The governor recognized the DEP's efforts to develop a feasibility study regarding the impacts of West Virginia's compliance with the U.S. Environmental Protection Agency's Clean Power Plan (CPP).

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A Rare Win-Win-Win Situation

DEP, DNR team up to protect environment, provide fish habitat

by Jake Glance

A "win-win" situation is pretty common, but a genuine "win-win-win" situation is about as rare as a Loch Ness Monster sighting.

But that's what happened Jan. 2 at Capitol Market in Charleston when hundreds of people donated their Christmas trees to be repurposed as fish habitat in lakes all across West Virginia.

The people who donated trees win because they are taking an active role in protecting the environment and promoting an outdoor activity. The Department of Environmental Protection (DEP) wins because these trees are

not going to end up in a landfill. And the Division of Natural Resources (DNR) wins because lakes that have flat mud bottoms will now have habitat where fish can seek protection from predators and have a place to spawn. And maybe the people who donated the trees will one day catch some of the fish that benefitted from the protective habitat.

"It is a great thing to see," said Sandy Rogers, manager of DEP's Rehabilitation Environmental Action Program (REAP), of the line of cars with soon-to-be-donated trees tied to the roofs.

See TREES, Page 5



DEP and DNR contractors were busy on Jan. 2 loading hundreds of Christmas trees onto trucks to be taken to lakes across the state. The trees will be placed on the bottom of these lakes to provide fish habitat.



Cars were lined up to drop off Christmas trees on Jan. 2. at the Capitol Market in Charleston.

Public Forum Discusses Clean Water

by Jake Glance

Dozens of groups - from the DEP's Rehabilitation Environmental Action Plan (REAP) to the West Virginia Rivers Coalition to the West Virginia Bureau for Public Health - came together Jan. 9 to discuss the importance of clean water and what is being done to protect water sources.

The date of the event was no accident. It was the second anniversary of the Freedom Industries spill of 10,000 gallons of crude MCHM, which contaminated the source of drinking water for about 300,000 people in nine West Virginia counties.

DEP's REAP booth was front and center at the public forum. Tomi Bergstrom, Kim Smith and Terry Carrington were available to answer questions from the public about DEP's role in protecting sources of drinking water.

See WATER, Page 5

DEP, Contractor Fighting Flames of Coal Refuse Fire in Boone County

by Jake Glance

Work continues in a remote hollow near Bald Knob in Boone County to extinguish a burning coal refuse pile associated with an abandoned underground mine.

The work involves moving tens of thousands of tons of dirt and rock that previously made up a land bridge across the hollow in order to get to the burning material beneath it.

With each basket full of dirt and scorching material, workers risk a flare up - a fireball big enough and hot enough to ignite anything nearby.

This is at least the third fire that DEP's Office of Abandoned Mine Lands and Reclamation has investigated in the past year - the others being in Marion and Preston counties.

The Boone County mine suspected to be the source of the refuse - the old Wharton No. 1 - is believed to have been active in the 1940's. AML officials believe the fire, however, was ignited by activity within the past 10 years. That activity could have been anything from vandals deliberately setting a fire to sparks created during logging, camping or hunting.

"About three years ago it was identified that it was burning. Two years ago we visited the site and it wasn't as bad, and then in 2015 we came back to this site and found that approximately 110,000 cubic yards of material was on fire," said Jason Foster



The rising smoke from the burning material could be seen for miles from the work site.



The basket of an excavator is barely visible among the smoke and flames rising from a burning coal refuse pile in Boone County. The burning material has to be spread out in order for it to cool enough to be moved.

with AML.

To give an idea of scale, a cubic yard (27 cubic feet) is about half of what a [Ford F-150 truck](#) can carry in its bed (52 cubic feet). So imagine 55,000 F-150 truckloads of material on fire, under the ground.

Work to extinguish the flames began in December and is expected to last into late January.

Temperatures of the burning material have reached over 600 degrees Fahrenheit.

"One nice thing about this situation is the rain," said Foster. "The rain has been just enough to keep the flames from spreading and possibly creating a forest fire. The Division of Natural Resources had foresters come out and blow some leaves out of the adjacent roads to minimize the risk of it spreading."

The excavators climb up and down the steep walls of the hollow, working to pick up hot or burning material. Each bucket full of material is then spread out, allowing it to cool before it is loaded onto a dump truck and hauled further up the hollow. The material is then covered.

Foster says cooling coal refuse fires is the same as opening a kitchen oven to allow it to cool down quickly, or spreading out the coals from a campfire before covering them.

"The pile itself creates an oven effect, so you may only have small areas that are actually burning, but the whole pile will be 200, 300, 400 degrees because of the residual heat that is held in by the soil."



Once cooled, the material is hauled up the hollow and then covered. The valley will eventually have a grouted rip-rap channel for surface water.

In this case, one of the worst ways to fight the fire would be to dig a hole and pump water in. That could result in an explosion of steam and boiling water.

"When the work is complete, we will have constructed grouted rip-rap ditches and have made every attempt to pick up surface water from above the project and convey it to the area below the project, and re-establish at least some surface drainage," Foster said.

A&A Energy of Welch is handling the on-site work. The entire project is expected to cost around \$890,000.

For more on this project, watch the next edition of "[Environment Matters](#)" on the [DEP YouTube channel](#).

Berkeley County Facility Turns Trash Into Fuel

by Jake Glance

A facility set to open in Berkeley County next year will convert trash into fuel that will be burned at a local cement factory.

The Entsorga West Virginia plant will also reduce the amount of trash that is taken to landfills, said Clint Hogbin, the chairman of the Berkeley County Solid Waste Authority.

The population of Berkeley County has increased by about 35,000 since 2000, making it the second most populous county in the state after Kanawha County.

Hogbin said the increase in the amount of trash being sent to landfills meant a new solution had to be developed, since residents were against expanding landfills or building new ones.

The work to build a trash-to-fuel facility began with a feasibility study in 2009. One of the recommendations of that study - taking into account Berkeley County's population growth, housing boom, increased waste stream, and geology - was resource recovery.

The Entsorga plant, which will cover an area of 80,000 square feet, is expected to be operation in 2017 and provide more than 100 construction jobs and about 20 permanent jobs.

"The trucks that will be going into Entsorga are the ones that would otherwise be going into the landfill," Hogbin said.

"We are expecting 70 percent landfill reduction that will now be going to resource recovery."

Also part of the recovery process will be separating metals that can be recycled.

See **FUEL**, Page 3

Have a story idea?



DEP Donates Hundreds of Dollars to Manna Meal

by Jake Glance

The numbers are scary. Manna Meal, the shelter that provides meals to those in need, serves 146,865 meals per year. Its guests consume more than 7,300 gallons of milk per year. And approximately 17.8 percent of Charleston's residents live below the poverty rate of \$957 per month.

And approximately 250 children eat at Manna Meal every month.

But now, thanks to some kind-hearted people at DEP, Manna Meal has \$511 more to continue its mission.

It may not sound like a lot of money, especially when considering the intimidating mission of feeding those who are hungry, but the people at Manna Meal are experts in stretching every penny that is donated.

"This donation will cover a good portion of what we spend per month, so we are very appreciative," said Kay Albright, the outreach coordinator at Manna Meal.

"More than 1,000 meals can be served with this amount of money, and maybe even 1,500 depending on what we make."

The money that was donated came from several fundraisers at DEP.

A total of \$23 came as a straight



AML's Mandy Strader (left) presented the donation to Kay Albright of Manna Meal on Dec. 23. Albright says the donation can be used to provide more than 1,000 meals for those who need them.

donation, \$220 was made from a silent auction, \$170 came in on Soup Day, and \$98 was the take from a wreath sale.

"We get a lot of items donated by supermarkets, and especially this time of year we can make a lot of hot soups."

Donations like this are more important during the cold winter months, Albright said. She said people who come in aren't always the ones who are homeless.

"There are some who come in who have missed bills and have had their electricity turned off and have no way to cook. And we find that not only do more people come in, but we find they come in earlier and earlier just to get out of the cold."

To see what items Manna Meal is in need of, or for information on how you can volunteer to help this organization, go to www.mannameal.com.

For "Sassy Squatch," Being BADD is a Good Thing

by Colleen O'Neil; Photos courtesy of R.I. Robertson

"It's good to be BADD."

Laura McGee, an environmental resource specialist with the Department of Environmental Protection's Environmental Enforcement Office, is speaking about being on a roller derby team.

BADD, which is the acronym for the Beckley Area Derby Dames, is composed of women who are anything but bad. Many of these women are professionals and most are moms.

"We have an attorney, a nurse, and a teacher on the team," she said.

She explained that derby today is not full of drama like in the '70s.

"There is still big hair and fishnet stockings, but it's more of a sport rather than a spectacle."

It's more about strategy and control, she added, and is easier on the body.

McGee's interest was piqued when her husband was covering a BADD game back in 2011.



Laura McGee's roller derby nickname is "Sassy Squatch" when she takes to the rink with the Beckley Area Derby Dames, or BADD.

"I went with my husband to a game," she said, explaining that he was writing for an online magazine. "After watching one bout, I was hooked."

A "bout" is what a match or game is called.

McGee's first real experience with roller skates was her first BADD practice.

"As a child, I'd go to the roller

rink. I would stay in the food area or the game room, where my friends were, but I didn't really skate."

"My first time, I looked like a baby deer, learning how to walk."

"Strangely, one of the main reasons I like derby is because I'm not very good at it."

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FUEL

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Basically, once the trash comes into the plant, it is sorted and allowed to dry in a process similar to composting. The trash is then chipped and shredded into a material called "fluff" that can then be shipped to factories that will burn it for fuel.

One customer is the EssRoc cement plant just 1.5 miles away in Martinsburg, where it will be burned with coal in cement kilns. Normally, the SRF - or solid refuse fuel - would be converted to pellets and shipped by truck or rail. But since it is staying in Berkeley County, it can be transported in its fluff state.

Hogbin says it could be a near perfect solution for Berkeley County, given an expanding population that is building more houses on valuable land, an increased waste stream, and the opposition to expanding landfills.

"There was this mindset of 'Can't we do something different and better than just putting this stuff in a hole in the ground?'" he said.

Hogbin admits selling an idea that would burn less coal in a factory was likely easier in Berkeley County than it would have been in other areas.

"Whatever can we use to make energy, we are open to it."



Earl Ray Tomblin

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The “Other” Other Shale

Utica & Marcellus get lots of press, but get ready to hear about Rogersville Shale

by Jake Glance

It’s akin to buried treasure - something whose value is so secret that the companies looking for it don’t want their competitors to know how much it might be worth.

It is a shale formation - a formation whose depth can be measured in miles instead of feet - that could be the next big play in West Virginia and other Appalachian states.

The target is the Rogersville Shale, a formation of rock estimated to be many times thicker than the Utica Shale or the Marcellus Shale - two gas-bearing formations that have been the topic of discussion in West Virginia for years.

The Rogersville Shale is so deep - up to three miles below the Earth’s surface in spots in West Virginia - that so far only two permits have been applied for and approved for companies to drill into it. Both are for vertical test wells in Putnam County. One permit belongs to Cabot Oil and Gas and the other to Hard Rock Exploration.

Cabot is the only one of the two to have drilled a well so far, and has been granted approval from the state Oil and Gas Conservation Commission to keep data related to that drilling confidential.

The Rogersville Shale formation is known as a “tight” formation - because the gas has less space to occupy in the rock than in the Marcellus Shale.

The Rogersville Shale thickness estimates could reach 700 to 1,000 feet - much thicker than the Marcellus Shale, which is estimated to be about 75 to 100 feet thick.

“Some places, what they do is figure gas volume per ton of formation,” said Jeff McLaughlin of the DEP’s Office of Oil and Gas (OOG).

“If you’ve got a 1,000-foot thick formation compared to 75 feet, how much more material do you have there?”

The Rogersville Shale is capable of holding large quantities of gas - and the test wells being drilled now will determine if there is a play in this

formation.

This shale formation is called “source rock,” which means the hydrocarbons formed there over millions of years. In other formations, the hydrocarbons migrated there - moved upward through layers of rock until stopping at a layer dense enough to trap it.

“One of the reasons the gas has not migrated is because the Rogersville Shale is not porous or permeable. It’s attached to the little grains of the formation,” McLaughlin said.

In the Marcellus and Utica shale formations, operators generally drill horizontally because this method yields more oil and gas. If there’s a boom in Rogersville Shale drilling, most of those permits are expected to be for horizontal drilling as well.

It’s much more expensive to drill horizontally into Rogersville than it is into the Marcellus Shale, however. A Marcellus horizontal well could cost between \$3 million and \$4 million, while a Rogersville Shale horizontal well could run \$18 million to \$30 million.

There is a limit to how far beneath the surface exploration for gas will go. At some point, drillers hit “the basement,” igneous rock that contains no hydrocarbons. The igneous rock at this depth probably formed when the planet

Earth formed and has remained unchanged for hundreds of millions or even billions of years.

“There isn’t a lot of information yet on the Rogersville Shale,” said Gene Smith, assistant chief of the permitting section of OOG. “There will be more test wells, more people at county courthouses checking mineral tracts for leasing.”

Smith and McLaughlin agree that economics are playing a role in the slower exploration and development of horizontal wells in the Rogersville Shale. Not only is it more expensive to drill that deep, but the gas that is recovered isn’t fetching a good enough price.

Gas production in West Virginia has increased more than six-fold since 2000.

“You hear people use the term ‘game changer.’ The shales we have in the northeast are about the most prolific in the world right now,” McLaughlin said.

“In the last four years or so, it’s really unheard of to have the increase in gas production that we have seen in West Virginia. So what the industry is trying to do is say there’s enough gas out there to provide for all of our future uses, but a lot of it is going to be untapped until the economy comes back and the demand is there.”

Rewards and Recognition



Secretary Huffman presented a Rewards and Recognition award to Kathy Thacker of the Logan Field Office on Jan. 7. She has been described as being extremely faithful to the agency, trustworthy, and dedicated to providing good customer service. She has excellent attendance and is often in the office in advance of her scheduled work hours. She is assigned to the Article 3 Permitting Group responsible for permit renewal tracking and notice of intent to prospect tracking. She is responsible for all permit filing fee receipts, and makes all bank deposits for the Logan office. She is always willing to assist other staff members and does so with a positive attitude and a humble spirit. Congratulations Kathy!

DERBY

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“Playing this sport is a challenge that consistently forces me to go outside of my comfort zone. One of the most common statements I hear during practice is, ‘If you’re falling, you’re learning.’ Even the best skaters on our team fall down, because they’re constantly pushing and testing their boundaries in order to become even better players.”

Most sports teams have nicknames for their players. BADD is no different.

“Our nickname is our alter-ego,” McGee explained. “That’s the name we are known by, the name they announce at games, and it’s even the name on our uniforms. There are women on our team that I only know by their nickname!”

“I came up with ‘Sassy Squatch,’ which is funny because I’m not sassy or tall.”

When they’re not having practice or bouts, the ladies of BADD are en-



gaged in humanitarian interests.

“We’re active with the Raleigh Humane Society,” she said. “We’ve taken the dogs for walks. We also participate in Adopt-A-Highway.”

“For all our home bouts, we partner with a charity. We usually do a 50/50 raffle.”

“BADD has a great attitude of acceptance. Regardless of your skill level, walk of life, or whatever, you will be welcomed on this team,” she said. “The only requirement is that you be dedicated to the sport.”

For more information about BADD, please see the website, www.beckleyareaderbydames.com, or check out BADD’s Facebook page.

WATER

con't from Page 1

"Getting out to events like this is very important," Bergstrom said. "Face to face is the best way to interact with people and tell them what we are doing to protect their environment."

A main topic of discussion at the public forum was types of contamination threats to drinking water supplies.

The difference between nonpoint sources and point sources of contamination were highlighted in discussions about DEP's role.

Point sources - pipes, ditches or channels - require National Pollution Discharge Elimination System (NPDES) permits issued by the DEP.

With nonpoint sources, it is usually difficult to determine exactly where the polluted runoff is coming from. These sources include city streets, acid mine drainage or seepage.

Dr. Rahul Gupta, commissioner of the West Virginia Bureau for Public Health, opened the public forum.

"We encountered some unique challenges on Jan. 9, 2014, and one of those was that we were on the ground and we were dealing with a substance that we didn't know what to do with. There wasn't a lot of information about it," he said.

Gupta said now there is better availability of information about various contaminants that will help emer-



Location, location, location: DEP's REAP booth was noticeable and easily accessible to the approximately 100 people who attended the public forum on Jan. 9 at the Culture Center at the State Capitol Complex.

gency responders know what to do if placed in a similar situation.

He also said aboveground storage tank registration laws will help emergency responders.

"We have to know where the tanks are, what are the substances in those tanks, and get that information from the data sheets to the utilities. We have to figure out what are the emergency plans, and then not just leave them on paper but have some public input into it and then have some exercises to be able to do all that."

Gupta said those practices were not in place during the Freedom spill but they are now.

He also mentioned tracking of certain medical conditions that could

be traced back to contamination of drinking water or other environmental conditions.

"We will be able to see why a particular area of the state has such a high mortality rate or morbidity from a certain disease so we can go after the causes. Sometimes it isn't a black or white thing, but there are things we as citizens can do to mitigate the risk factors that lead to those diseases."

The Safe Water for West Virginia forum was made possible through the support of the DEP, the MARPAT Foundation, the Virginia Environmental Endowment, the Unitarian Fund for a Just Society, West Virginia American Water and the West Virginia Department of Health and Human Resources.

SPEECH

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"While the DEP continues to work on a feasibility study, we anticipate our final plan may include ideas such as reforestation and the replacement of boilers to increase power plant efficiency."

Tomblin also detailed a plan to utilize large tracts of reclaimed mine sites such as the former Hobet surface mine in Lincoln and Boone counties.

"With 12,000 acres located just off

Corridor G, this site is large enough to fit virtually every major economic development project in recent history – including Toyota, Procter & Gamble, Gestamp, Macy's, Amazon, and more – with thousands of acres left over."

"We know this is a major undertaking, and with the help of local landowners Marshall University, West Virginia University and the Virginia Conservation Legacy Fund, we are working together to find new uses for this site while mining activity continues."

Natural gas production in West

Virginia was also discussed.

"The ongoing development of the Marcellus and Utica shale – and the Rogersville formation just being explored – is already bringing new revenues and new jobs for West Virginians."

"As the ninth largest producer of natural gas in the country, we must work with those operating here to create the processing and pipeline infrastructure necessary to ensure this industry's continued growth."

[The full text of the governor's speech can be found here.](#)

TREES

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"Even if they weren't going to our lakes for fish habitat, if they were just being donated to be composted, it's a great joint effort between DEP and DNR."

"It's a home run all around," said Bob Fala, the director of the DNR. "It reduces solid waste, it provides fish habitat, and it gets the public involved. It means they are taking an active role. And this involves our parks folks as well."

The trees were taken to Big Ditch Lake, Burnsville Lake, Stonecoal Lake and Tygart Lake. These lakes have flat mud bottoms and would otherwise have almost no fish habitat.


As an added incentive, people donating their Christmas trees could enter to win a raffle with prizes such as ski packages at Canaan Valley and Timberline, a getaway at Chief Logan State Park, or a gift certificate to Capitol Market.

"It's interesting, though, because some people don't even know about the raffle. We have to go to them and ask them to sign up for it," Rogers said.

Hundreds of trees were donated during the four-hour event.

Recycled Christmas trees can be used for more than creating fish habitat. In the past, they have been used to [rebuild sand dunes following Hurricane Sandy](#) and even [providing habitat for animals in zoos](#). Another option for live Christmas trees is to get a tree with the root ball protected by a burlap bag and then plant the tree after the holiday is over.





New Hires

Seth Burdette, Division of Water and Waste Management
 David Kersey, Business and Technology Office
 Jennifer Proctor, Division of Mining and Reclamation

Recent/Upcoming Retirements

Charles Armstead, Division of Land Restoration
 Earl Holt, Division of Mining and Reclamation
 Rhod Mills, Division of Water and Waste Management
 Mark Rudolph, Office of Legal Services
 Louis Tangeman, Division of Mining and Reclamation