

Watershed Alliance of Adams County

AdamsWatersheds.org

Newsletter, January 2014

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Message from the President

Mark D. Berg

Happy New Year from the members and Board of the Watershed Alliance!

WAAC members understand the importance of water, and know the mission of the Watershed Alliance (WAAC) is to monitor, improve and protect water resources in Adams County. That's why they joined WAAC.

Our three-pronged strategy for accomplishing our mission – investigation, education, and advocacy – is rooted in the support of our members.

Investigation involves data collection and analysis, employing rain and stream flow gauges, taking water level measurements in unused wells, and analyzing stream water quality. Using this data and other sources, we inform and educate people, from students to senior citizens, about water in Adams County and what can be done to protect it. And finally, we advocate sound water improvement and protection measures for local government, business, and agriculture.

Equally important, we collaborate and cooperate with other organizations on joint projects. For example, WAAC is a sponsor of **Strawberry Hill's 2013 Environmental Education Conference and Grant Competition** to provide educators with academic content and monetary resources to support field trips, to facilitate in-classroom environmental programs, and to conduct school visits. We also assisted the **Land Conservancy through a Challenge Grant to help preserve the headwaters of Marsh Creek.**

Without the financial support of our members, none of our success would have been possible.

I hope you will join us.



Measuring Stream Flow

As seen in *The Gettysburg Times*

On the second Friday of every month, the Gettysburg Times includes a column written by members of the Watershed Alliance of Adams County; previous columns can be found at WAAC's web site.

The following are recent columns.

Pipe Dreams

Charles Skopic

Piping water from the Susquehanna River to the Gettysburg area was proposed by the Gettysburg Municipal Authority (GMA) in 2006 to provide an additional water source when needed. That proposal has been under review by the Pennsylvania Department of Environmental Protection and the Susquehanna River Basin Commission since then. Their approval is needed because the proposed pipeline request for up to 3 million (recently reduced to 2 million) gallons/day, would transfer water from the Susquehanna River drainage basin to the Potomac River basin – an “out-of- basin” transfer.



Since that initial proposal, the GMA has spent thousands for an engineering firm to answer questions raised by the regulatory authorities. Many unanswered questions remain, including whether the piped water could be reduced or cut off during an extended drought when other towns, cities, industries, power plants, and the Chesapeake Bay are depending on Susquehanna River water.

There also are questions about whether that piped water is really needed, how much it will cost, and who will pay for the needed infrastructure. In the near term, the GMA has just put into service a new well, permitted to provide an additional 432,000 gallons/day, and has dropped its requirement that developers seeking GMA water must provide well sites that could produce 125 percent of their expected usage.

But is the piped water needed for the longer term? Adams County receives a lot of water from precipitation— about 39 inches/year on average. About 62 percent of that evaporates or is used by growing plants; about 20 percent runs off into streams after a rain; and only about 18 percent infiltrates as groundwater available for wells or base flow into streams during dry periods. That still leaves enough water for us if we properly plan, protect, and conserve it. In the Gettysburg Lowland hydrogeological area, which covers 350 square miles (about two-thirds of the county), a 2001 County water supply study found that even during a once-per-decade drought, the groundwater recharge rate is about 132,000 gallons/day per square mile, totaling some 46 million gallons/day. Additionally, if even a fraction of the precipitation which runs off after storms is captured and stored in reservoirs, tanks or pools, an uncertain pipeline supply seems unnecessary.

The impediment to relying on increased local water storage or greater use of groundwater is that it requires multi-municipal planning and cooperation. The GMA serves as a regional water supplier with limited authority and dysfunctional governance. Its Board is appointed by the Gettysburg Borough Council but serves customers outside the Borough, and must rely on neighboring townships because most of its water comes from wells located there. The GMA has no authority to protect the recharge areas for its wells or do regional water planning. Adams County government has no comprehensive water plan even though one is required by state law. Given this situation, the GMA understandably seeks piped-in water for its potential needs.

But if the pipeline is approved, the GMA could allocate that water for about 10,000 new homes, schools, and related businesses. This would create much more impervious surface, thus reducing groundwater recharge for existing wells and creating the need for even more piped in-water during drought emergencies. The current pipe dream could become a future nightmare unless our local governments adopt “smart growth” policies, better GMA governance and, regional water planning.

Drier Times to Come?

*Adam McClain
Watershed Specialist for the Adams County
Conservation District.*

Since 1980, there have been five Drought Emergency declarations by a Pennsylvania Governor for Adams County: 1980, 1991, 1995, 1999, and 2002. A drought emergency requires a mandatory reduction in water use of 15 percent. The worst of those droughts was in 2002 when the declaration lasted from February to September. Many private wells went dry, creating an economic burden on residents, and a lot of the typically flowing streams were waterless or were just puddles. Since we haven’t had an official drought in 11 years, are we past due?

I wouldn’t draw that conclusion based solely on the frequency of droughts over the past 33 years, but it has been a relatively long time since our last drought. According to the National Oceanic and Atmospheric Administration, Adams County has been in a rain deficit for the past 240 days. You need to keep in mind that rain surpluses and shortfalls can be misleading when looking at how it affects our available water supply. It’s usually not how much rain we get in a year, but when and how we get it. Currently, our water table is in pretty good shape and rainfall is close to average. However, I can’t predict the future, and conditions can change quickly, so only time will tell.

What we do know is that over the next few months the groundwater levels will be dropping as they normally do this time of year.

Groundwater levels drop during the growing season because the rain that we do get is pulled up through evaporation or consumed by plants. These conditions make summer months more susceptible to drought. So how do you know if we are in an official drought?

There are four factors that the Pennsylvania Department of Environmental Protection (DEP) uses to determine if the state is experiencing or entering a water supply drought: precipitation, surface water, groundwater, and soil moisture. Shriveling corn stalks typically are the earliest sign that we are behind in rain and soil moisture. Groundwater and surface water sources typically lag behind and may not display drought conditions for up to three months. DEP also factors in water storage available in reservoirs; since there are no large reservoirs supplying water to Adams County, the limited water storage make us more prone to droughts.



Stock Photo

DEP and the Pennsylvania Emergency Management Agency manage droughts based on a three-stage process using the indicators above. A drought watch is the lowest of three levels, asking for a voluntary 5 percent reduction in water use by residents. Our last drought watch was in September 2010. The next stage, a drought warning, calls for a voluntary reduction of 10 to 15 percent. Our last drought warning started in November 2001 before the February 2002 drought emergency declaration. The final stage, which was described above, is the drought

emergency with the mandatory water use reduction.

Even though we are experiencing normal conditions, we will have some extra demand on our water supply with the 150th anniversary of the battle of Gettysburg. Knowing that events will be happening during our drier months certainly makes this year a good time to exhibit common sense when dealing with water use. a Stulz, Freedom Township resident, checks a rain gauge provided by WAAC and the Adams County Conservation District through a grant from the Hoffman Trust.

Wasting Water for Profits

Dr. Water Brasch

This article first appeared in summer 2013 edition of The Sylvania, the newsletter of the Pennsylvania Chapter Sierra Club, and is reproduced by permission.

For National Drinking Water Week (May 5–11, 2013), the Pennsylvania Department of Environmental Protection (DEP) put out a press release to ask Pennsylvanians not only “to make every drop count,” but also to “to learn how to better protect and conserve their water.”

The release gave a few brief suggestions of how “to keep pollution out of water sources,” and how “to conserve Pennsylvania’s water sources.” The release even gave a huge puff to Gov. Tom Corbett who DEP said “is committed to water protection efforts that are vital to ensuring the health of the public and Pennsylvania’s economy.”

Here are a few things the release did not state. Two months after he took office in January 2011, Corbett declared he wanted to “make Pennsylvania the Texas of the natural gas boom.” To do that meant he and the Republican-controlled legislature had to create, with the help of the conservative American Legislative Exchange Council (ALEC), what became Act 13, which Corbett signed on Valentine’s Day 2012. It was a sweetheart gift

to the natural gas exploration industry, the same one that had donated more than \$1.8 million to Corbett’s previous political campaigns.

And so the state officially recognized and encouraged the development of high-volume horizontal fracturing. Fracking, as the process is better known, is the controversial method of drilling into a rock formation as deep as 12,000 feet below the earth’s surface. After drilling down vertically, the company creates a perforated lateral borehole, about 90 degrees from the vertical hole, which fractures the shale and rock for up to 6,000 feet , opening channels and forcing out natural gas and fossil fuels.

Proppants, as much as two million pounds of silica sand, keep the fractures open to allow the gas to flow from the shale into the well bore. Chemical additives, most of them toxic and labeled as carcinogens, prevent pipe corrosion and help force the sand and water into the site.

But it is the water that is critical to the success of fracking. Each well requires between three and nine million gallons of fresh water for the first crack. A well can be fracked additional times.

Now, let’s pretend that each well pad and the associated infrastructure (roads, pipelines, etc.), which carve out eight acres, don’t contribute to fragmentation that affects wildlife and the ecological balance of nature. And, let’s pretend that there wasn’t a 7 percent failure of the cement casings in the past two years that, at least in theory, protect the billions of gallons of water, toxic fluids, and sand from leaking into the earth. And, let’s pretend there can never be any migration of all that toxic fluid into aquifers and somehow into the wells of about two million Pennsylvanians.

Let’s also pretend that the water brought up from fracking doesn’t contain chemical compounds and radioactive waste that was disturbed by the process. And, let’s pretend that the billions of gallons of this toxic mixture brought up isn’t put into open storage pits,

where it could evaporate into the air or leak from plastic liners of the pits and into the ground.

And, let's pretend there are no problems with the current method to get rid of that toxic waste that is injected back into the ground, and that doing so won't cause more pollution and, possibly, a series of small earthquakes.

Let's stretch our level of credulity and pretend there is no air, water, or ground pollution, and that there are no health and environmental effects from fracking. And, let's really stretch our level of naiveté and pretend that unlike water used by farmers that goes into the ground or air and can be recycled, or that water used by individuals that is flushed into a sewer plant, processed, and then returned to the earth, that the waste water of fracking is also reusable.

Disregard the evidence, and accept what we are told by the industry and politicians, who swear upon stacks of \$100 bills, that fracking is safe and controlled. There is still the question of water, the most critical part of fracking.

In 2005, there were only eight unconventional wells in Pennsylvania. By the end of 2012, there were 6,258 wells. That would mean at least 44 billion gallons of water, most of it taken from the state's rivers, was used to frack the environment. That doesn't include all the water that was spilled and unusable. So, while the state wants individuals to conserve every drop of water, it is also encouraging out-of-state megacorporations to grab as much as they can in order to continue to frack the state.

However, it's the last sentence of the DEP press release that may be the most important. "This year," say the DEP's PR people, "marks the 39th anniversary of the Safe Water Drinking Act, the main federal law that ensures the quality of drinking water in the United States."

What the press release doesn't say is that the Safe Water Drinking Act doesn't apply to the natural gas industry. In 2005—by a 249–183 vote in the House and an 85–12 vote in the Senate—Congress exempted the oil and natural

gas industry from the Safe Water Drinking Act. That exemption applied to the "construction of new well pads and the accompanying new roads and pipelines."

Vice-President Dick Cheney, whose promotion of Big Business and opposition to environmental policies is well-documented, had pushed for that exemption. His hand-picked "energy task force," composed primarily of industry representatives, had concluded that fracking was safe. Cheney had been CEO of Halliburton, one of the world's largest energy companies, now headquartered in the tax haven Cayman Islands; the exemption became known as the Halliburton Loophole.

The fracking industry, by Congressional action, mostly during the George W. Bush Administration, is also exempt from all or parts of the National Environmental Policy Act, Clean Air Act, Clean Water Act, and the Resource Conservation and Recovery Act.

Another federal law that was created to protect Americans was the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that created the "superfund" that holds companies financially liable for causing hazardous waste. However, Congress specifically exempted oil and natural gas industries from CERCLA.

The DEP and the Corbett Administration can issue all the press releases they want. But they can't deny the reality that while they want individuals to save every drop of water, the state officially encourages the use and waste of water in its mindless race to excavate all the gas it can get—in the false assumption it will create jobs, improve the economy, lower gas prices, and make the U.S. energy independent—but at the cost of the health of the people and the destruction of their environment.

Dr. Brasch is an award-winning journalist and the author of 17 books. His most recent book is Fracking Pennsylvania.

About the Watershed Alliance

The mission of the Watershed Alliance is to monitor, improve, and protect water resources within Adams County.

WAAC is a member-based, nonprofit organization whose goals are to

- ◆ Help residents better understand the complex watershed issues affecting Adams County;
- ◆ Encourage sound water management and land use practices that will promote a sustainable watershed resource;
- ◆ Support a county-wide water monitoring program and data base to use for evaluating water resources; and
- ◆ Identify and carry out watershed improvement projects.



How to Join the Watershed Alliance

Not yet a WAAC member?
Join us now!

Membership Application

WAAC is a 501(c)3 organization under the rules of the IRS. Membership dues are tax-deductible to the extent of the law.

Membership Benefits

- ◆ Members' Newsletter
- ◆ Member events and field trips
- ◆ Satisfaction of protecting water resources
- ◆ Joy of community service

Annual Dues

◆ Individual	_____	\$20
◆ Family	_____	\$30
◆ Protector	_____	\$50
◆ Guardian	_____	\$100
◆ Conservator	_____	\$250
◆ Steward	_____	\$500
◆ Life Member	_____	\$1,000

Name _____

Address _____

Phone _____

Email _____

Thank you!

Please mail your check to:

Watershed Alliance of Adams County

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