

3042

Washington Public Hearing

My name is Tim Hite and I am a student here at W&J where I am president of the Jefferson College Republicans. I'm also a senior but will be graduating and looking for a job after next semester.

It is extremely concerning to me as well as many of my classmates that upon graduation there will not be opportunities for us to find a job in today's Pennsylvania workforce. It is well documented that the unions chased the steel industry out of our region many years ago. I see a remarkable parallel with the energy industry, except this time it's not the unions, it's Obama's EPA and Tom Wolf's DEP that are run by ideologues hell-bent on killing the fossil fuel based economy.

The Green Monsters at DEP are killing precious job opportunities for everyone at this school, and for every student across the commonwealth.

Regarding the new regulations, both conventional and unconventional operations are already struggling because of the diving gas prices and the current burdensome regulatory framework in which they are forced to operate in.

The DEP has repeatedly failed to state what is inadequate about the current regulations before asking for more. Again this seems like another senseless attack on job creators by environmental zealots.

This is not just about the "big guys" this is very much about the "little guys" too that are affected both directly and indirectly by the over-reaching arm of the DEP.

The proposed regulations will cost even more money, and I request that the DEP stop the current process and go back and do the necessary examination of need for change, Financial analysis, an impact on small businesses.

I would respectfully ask Governor Wolf and his gestapo DEP to stop over-regulating oil and gas and the fossil fuels based industries because I would like to stay in Pennsylvania to work and raise my family, for many generations to come.

Thank you.

Tim Hite

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IRRC

April 29, 2015

Don Zuch
295 Arden Road
Pittsburgh, PA 15216

RE: 25 PA Code Chapter 78, Subchapter C

Although I am testifying as a private citizen, for disclosure, I am an environmental consultant with 29 years of experience currently working at Hull & Associates, Inc. (Hull). Hull is a project development and consulting firm specializing in the Alternative Energy, Brownfields, Environmental, Shale Oil & Gas, and Waste Management markets. Founded in 1980, Hull currently has 7 offices, is 170 employees strong, and is recognized as a top 500 ENR firm that serves Pennsylvania clients from our Pittsburgh office. Hull is committed to helping upstream, midstream and downstream, and support companies manage the complex technological, environmental, and regulatory challenges posed by the rapidly unfolding shale oil and gas market. Our innovative engineering and environmental services help clients manage costs, protect the environment, and proactively manage regulatory compliance.

I am a registered professional geologist and have been a resident in the Commonwealth of Pennsylvania since 1989. Since arriving in Pennsylvania, many good things have happened to me as a result of hard work, doing my best to treat people right and sometimes being in the right place at the right time - but mostly through hard work. For example:

1. I had the opportunity to work as an environmental and remediation specialist for one of the great iconic Pennsylvania companies - Sunoco;
2. I met and married my wife and we have raised our three children right here in western Pennsylvania;
3. I started and operated a successful consulting company and grew it to 40 employees, with four offices in two states; and,
4. Due to the vision of some very intelligent people, and astronomical financial investments made by oil and gas companies, "unconventional" oil and gas exploration and development arrived in Pennsylvania, and has been one of the best things to happen to my family and me.

I think this is an example of the Commonwealth, all of us, being at the right place at the right time.

Because of the Marcellus Shale development in Pennsylvania, I was able to create an opportunity to merge my company of 11 years with my current employer in 2009. Over the past 4- 1/2 years, thanks to the robust development of the Marcellus and Utica shales, our Pittsburgh office has been steadily growing by over 50%. This profitable growth allows us to hire Pennsylvanians with recent degrees from Pennsylvania universities. Additionally, our firm is evaluating further expansion into the Commonwealth. Because of the Marcellus Shale development, we have recently seen client interest and business activity pick up in Hull's other market areas, such as Brownfield Redevelopment and Alternative Energy.

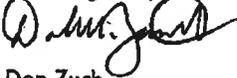
Our family has benefited as well, thanks to Marcellus Shale development. My wife, a life-long Pittsburgher, is a chemical engineer with degrees from The University of Pittsburgh and Penn State. She was able to return to work after having raised our three children as a stay at home mom. A gas producer recognized her experience and talent and hired her immediately. My wife will readily admit that, without the robust, profitable, Marcellus Shale development in the Commonwealth, she very likely would still be unemployed or at the very best underemployed. With all three of our kids in college at the same time, my wife's annual salary is a much needed addition to the family finances. I know there are hundreds of similar stories about how the Marcellus Shale development has helped individuals, saved companies and more - all across the Commonwealth.

In the early days of the Marcellus Shale development people would say "we have to get this right" in reference to not only the development of the Marcellus Shale itself but also the development of new and expanded oil and gas regulations. There was no dispute – everyone agreed. Through several iterations of massive collaborative efforts within the industry, working with the Pennsylvania Department of Environmental Protection (PADEP) and other agencies the current Chapter 78 Oil and Gas regulations were developed. In fact, these regulations have been recognized as being among the very best in the whole country! Not only that, but thousands of professional, labor and union jobs have been created from Pittsburgh to Philadelphia! Not only that but the industry has generated: \$830 million in impact taxes to be distributed to all 67 PA counties as well as PADEP; \$2.3 billion in various state and local taxes; and, over \$1 billion in royalties and bonuses have been paid from DCNR lands. Pennsylvania has been getting it right *already*.

It is clear that the promise of cheaper energy and the potential for large quantities of feedstock are garnering national and international attention from companies with the wherewithal to make huge investments in the Commonwealth. Accordingly, I see tremendous opportunity for years to come not only for my family and co-workers, but also the residents of the Commonwealth. Of course, there are concerns over the market pressures on the industry, my customers, and my wife's employer. Already there have been lay-offs and a dramatic decrease in operating rig-counts in the Commonwealth.

So, as the PADEP and EQB consider modifications to the Chapter 78 regulations, I ask that you follow the procedures established by law and listen carefully to subject matter experts who are "in the know" to ensure decisions are based on sound facts that are truly defensible. Good information, coupled with policies that foster development and downstream opportunities will ensure that my family, my co-workers and the Commonwealth of Pennsylvania continue to flourish.

Kind regards,



Don Zuch

Hello my name is Wendy Driscoll. I live in Bethel Park and have been a resident of PA for 23 years.

I am one of the proud Pennsylvania residents that can say they have a good paying job in the oil and gas industry. I was a single mom looking to get back into the workforce 4 years ago and was blessed to find this wonderful industry to work in.

This industry brings so much opportunity to the community's they operate in and the state as a whole. They have paid over 830 million in impact fees that help local communities and over 2.3 billion in additional tax revenue.

Pa already has world class environmental regulations that have been a model for states across the nation. These regulations have been reviewed and praised by independent boards.

It seems to me that the DEP is sidestepping the ability of the legislative oversight committee's and the independent regulatory review commission to formally comment on the sweeping regulatory changes proposed in the advance notice of final rulemaking. Several standards being proposed by DEP are not authorized under law, including new limitations regarding public resources, as this provision was struck down by the Supreme Court.

Natural gas is a clean burning fuel source, used for heating homes and supplying electricity as well as many other things. It has contributed to improving air quality in Pennsylvania. The activity in the Marcellus is being affected by all the new regulations and the low gas prices.

I feel blessed to still have my job. My company is a heavy construction company, operating in PA, OH, and WV. So far we have not had layoffs, but I know many people that have lost their jobs because of the slow down. Please seriously consider what this industry does for the community's it serves and the state as a whole. With out this industry being in PA we are looking at higher fuel costs, loss of good paying jobs and less business opportunity's to keep our young people in the state.

Thank you for listening



**Comments of John Walliser
Vice President, Legal & Government Affairs
Pennsylvania Environmental Council**

**Pennsylvania Department of Environmental Protection
Public Hearing on Advance Notice of Final Rulemaking:
Environmental Protection Performance Standards at Oil and Gas Well Sites
April 29, 2015**

Good evening. My name is John Walliser and I am a Vice President with the Pennsylvania Environmental Council (PEC), a statewide membership organization.

We commend the Department for making improvements to the environmental protection provisions in the proposed rulemaking, and for allowing further public comment. Chief among those improvements are more robust pre-drilling analysis to prevent pollution migration, more detailed analysis and reporting with respect to protection of water resources, and tougher containment standards.

PEC will be submitting more detailed written comments to the Department, but tonight I want to underscore the critical importance of finalizing this rulemaking proposal.

This rulemaking is the result of enactment of Act 13 of 2012, the subsequent Pennsylvania Supreme Court decision in *Robinson* (December 2013) on sufficiency of that statute, a series of issue workgroups convened by the Oil & Gas Technical Advisory Board, a previous round of public hearings and comment, and the collective management and enforcement experience of the Department over the past several years. At current pace, this rulemaking proposal will not be finalized until 2016. That's four years from the date of the authorizing statute.

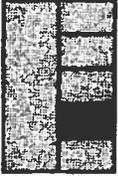
While there remain areas where we feel the rulemaking can be further improved – and again PEC will present those details to the Department as part of the additional public comment process – we must also recognize that the citizens and environment of Pennsylvania are best served by having regulations on the books and in operation across the state. This holds true of advancing updates to conventional well regulations as well; particularly containment and financial assurance measures to ensure that we don't further add to Pennsylvania's already significant and expensive legacy of abandoned well remediation.

PEC has long embraced the concept of continuous improvement through our own advocacy and involvement in efforts like the Center for Sustainable Shale Development. This rulemaking proposal is a strong step in that direction. While there are some who seek to derail this process altogether by trying to run out the procedural clock, they certainly don't represent the view of a majority of Pennsylvanians or the demonstration by many in the industry that we can achieve success and high standards in both oversight and operation. The people and environment of Pennsylvania deserve as much, and I probably don't have to remind you it's a fundamental right guaranteed by our state's constitution.

Again, we commend the Department for strengthening this rulemaking proposal, and urge swift finalization after receipt and consideration of additional public comment.

Thank you.

John Walliser
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DEVONIAN RESOURCES, INC.

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April 29, 2015

PA Environmental Quality Board
P.O. Box 8477
Harrisburg, PA17105-8477

Dear Honorable Board Members,

Good evening. My name is Joe Thompson. I am a third generation representative of a family business that has been in continuous operation since 1947. We are conventional producers of shallow oil and natural gas located in Northwestern Pennsylvania. We have enjoyed several booms and we have suffered as many busts but we have always persevered and lived to fight another day. Today, when I speak to my father and my grandfather about the current climate of our industry they are less confident about its' future than they have ever been. Where, in the past, there had always been a gleam of cock-eyed optimism, today there are dark shadows of doubt. It's not solely the downturn in commodity pricing. Markets ebb and flow. No, this prickly uncertainty results from the seemingly endless onslaught of new and revised regulation being imposed on our conventional industry by the DEP.

When I read the proposed regulation changes to Chapter 78 by the PA DEP I am forced to ask the following questions:

What has changed in the operations of the conventional Oil and Gas Industry in Pennsylvania since the 1960's? Nothing! If the way we operate has not changed, why then are the regulations which were promulgated in 1985 and updated in 2001 no longer adequate?

When we, as an industry collective, implore the DEP to share with us what scientific and empirical data they have gathered to justify these proposed changes what have they shown us? Nothing! Instead they prey on the emotions of the citizens of Pennsylvania by publishing photos of spills that are already violations under the current regulations. Why impose more regulation when they cannot effectively enforce those currently on the books?

When we, as an industry of small mostly family-owned businesses ask what alternatives or exemptions for small businesses have been considered in incurring costs of \$1.5 billion in implementation and then hundreds of millions of dollars per year ongoing to maintain the proposed Chapter 78 changes? Their answer: nothing! When asked to recognize the devastating financial implications of their proposals our protestations fall on deaf ears.

The spirit of the bifurcation of Chapter 78 was meant to regulate the Unconventional and Conventional Oil and Gas Industries separately; the conventional industry via Act 223 and the Unconventional Industry via Act 13. Instead, the PA DEP has executed a word processing exercise in giving us two identical sets of regulations labeled "Chapter 78" and "Chapter 78-A." They laugh in the face of our State Legislatures who saw the need for bifurcation and worked hard to push it through. The DEP scoffs at our conventional industry as uneducated rural roughnecks and work to implement unattainable regulation as a sort of retribution for our audacity in trying to save our jobs and maintain our rich heritage here in Pennsylvania.

There is no question that the protection of the pristine waters and natural resources of our Commonwealth is a noble endeavor. We, in the conventional industry are stewards of the environment. Yet we are labelled as "criminals" sight unseen by many in the DEP Offices in Harrisburg. If our activities in the conventional oil patch are so detrimental then why are the fresh water aquifers, streams, creeks, and rivers that course through Warren, McKean, Venango and Forest Counties among the most exceptionally valued and highest quality in the State? The mighty Allegheny River is an artery that the oil patch follows directly from Bradford to Butler; a national symbol of wild, uncontaminated beauty.

Ours is a cottage industry composed of small, family-owned and operated businesses located in the rural, economically depressed counties of Northwestern Pennsylvania. We employ the men and women from communities unknown to many: Titusville, Pleasantville, Oil City, Bradford, Warren, Sheffield, Kane. In many of these communities ours is the only industry left. We manage shoestring budgets and invest what slim profits we make into our employees or back into our businesses. We aren't J.R. Ewings or Daniel Plainviews. We are the people you bump into at the grocery store. Your kids are on the same soccer team as ours. Don't confuse us with the Chevrons, Shells and Senecas of the Marcellus and Utica Shale-plays. We are the local hardware store. Why treat us like Wal-Mart?

Pennsylvania's Conventional Oil and Gas Industry is the oldest of its' kind in the world. That legacy is threatened now more than it ever has been. Our industry deserves its' own set of regulations. Those regulations were written in 1985 and updated in 2001 and they work. Give them back to us, as written, so we can do what we do best; work.

Respectfully Yours,



Vice President
Drilling & Operations
Devonian Resources, Inc.

Stephanie Novak
Community Organizer
Mountain Watershed Association
1414-B Indian Creek Valley Road
Melcroft, PA 15462

As the community organizer for Mountain Watershed Association, home of the Youghiogheny Riverkeeper, I help to coordinate the Marcellus Citizen Stewardship Project which seeks to provide resources to communities dealing with current or potential impacts from shale gas development. MWA encourages residents of these communities to be self-sufficient by equipping them with the tools they need to engage in public participation and social change at the grassroots level.

Mountain Watershed Association will be submitting more extensive written comments than what I will present to you tonight. In light of that, I think it's important that I talk about why the DEP must listen to the advice of those here who advocate for the strongest regulations possible. Those who are directly affected by the finalized regulations have first-hand experience of how the oil & gas industry can impact the lives of people and their communities. They have invested significant time and resources to study the ever-growing number of reports that link this industry to serious consequences on the public's health, safety, and welfare. I ask that you consider their comments with the full weight their personal experiences carry.

I also would ask the Department to require, at minimum, a one-mile setback of oil and gas wells, waste storage facilities, and any other infrastructure from the property boundary of any school property as well as other locations with vulnerable populations. We commend the Department for adding schools to the list of public resources, but since there is no scientifically established safe setback we ask the Department to implement more protective measures for susceptible populations like the youth and the elderly. Just in the paper today, a citizens group in Penn Township, Westmoreland County is challenging their Zoning Hearing Boards' approval of a well pad that will be situated just 651 feet from a nursing home. It's happening

throughout the state, where residents are joining together to say "this is too close". DEP needs to listen to what communities around the state are telling them and implement additional protections, especially for populations of concern.

Mountain Watershed Association asks the Department to also require closed loop systems. Our organization has worked with families in Donegal Township, Westmoreland County, whose water has been contaminated by a leaking impoundment at the Kalp site. By engaging in direct advocacy and bringing media attention to the matter, we prompted the DEP to order, after months of inaction, water supply replacement for the families. We ask you to require that waste impoundments close immediately once the regulations go into effect, rather than giving operators 3 years to close them or bring them to compliance. We would also ask that this apply to both conventional and unconventional wells due to the inherent risks of spills, leaks, and accidents with open-air pits and tanks.

As an organization focused on water quality within the Indian Creek and Youghiogheny River Watersheds, we are concerned with the potential effects spreading brine as a de-icer and dust suppressant on our roadways will have on the waterways of the commonwealth. Like many watershed groups in Western Pennsylvania, Mountain Watershed Association maintains abandoned mine drainage treatment systems to remediate past damages from mining activities. We have made significant investments in keeping our streams fishable, swimmable and drinkable. We ask that the final regulations prohibit road-spreading of brine as there is no scientific evidence that proves this practice, when used over long periods of time, is safe for our watersheds.

Thank you for allowing me the opportunity to present comments on behalf of Mountain Watershed Association. I hope by sharing my experiences, I will have shed some light on how the regulations will directly impact the communities in which we serve. Our final written comments will further cover how the regulations can be revised to minimize these impacts.

D. Marc Jacobs, Jr.
Penneco Oil Company
6608 Rte 22
Delmont, PA 15686
724-468-8232

Chapter 78 Public Hearing – Washington, PA April 29, 2015
Pennsylvania Independent Oil and Gas Association

My name is Marc Jacobs. I am a Senior Vice President with Penneco Oil Company speaking on behalf of the Pennsylvania Independent Oil and Gas Association (PIOGA). Penneco is a member of PIOGA and I currently serve on its Environmental Committee and several subcommittees and workgroups.

First, I would like to thank the Department for arranging this forum to hear and consider the variety of public perspectives and interests represented here tonight. This rulemaking carries tremendous weight of consequence and we appreciate the opportunity to be heard.

PIOGA represents over 750 members, including oil and natural gas producers, drilling contractors, service companies, manufacturers, distributors, professional firms and consultants, royalty owners, and other individuals with an interest in Pennsylvania's oil and gas industry. The Pennsylvania Independent Oil and Gas Association is the principal nonprofit trade association representing Pennsylvania's independent producers, marketers, service companies and related businesses. PIOGA member companies drill and operate the majority of the state's crude oil and natural gas, including the Marcellus Shale.

Penneco Oil Company is a family owned and operated independent oil and gas producer based in Delmont, PA operating more than 950 conventional wells throughout the southwestern region of the state. As recent as last year, Penneco employed 60 workers behind the desk and in the field. Numerous challenges over the last several months have severely impacted our viability causing us to halt exploration, reduce our staff by 23%, and reassess our longstanding business model. The factors most responsible for our crisis are the price downturn of energy commodities and the heightened regulatory scrutiny from spud to production. This is the first time in my 30 years with Penneco that we have not had a drilling program. And frankly, with the prospect of additional regulatory expectations looming, the light is no longer visible as we peer into the darkness that has become our operational future in PA. Because for the moment, we have tied the knot at the end of our tenuous existence, I would like to submit the following regarding the Chapter 78 conventional draft revisions on behalf of PIOGA and its diverse membership community.

Regarding **Protection of Water Supplies** (§ 78.51) and the quality (d) (2) of a restored or replaced water supply, the requisite for restoration should never exceed the Pennsylvania Safe Drinking Water Act standards regardless of the pre-existing quality nor should it be the default restoration standard for pre-existing supplies of lower quality than SDWA. The pre-existing baseline should be the standard of restoration quality.

Regarding **Area of Review** (§ 78.52a), it is unclear whether the expanse of the requisite surface reconnaissance is 1,000' centered over the horizontal well bore or if it is intended to represent 1,000' from the path of the lateral in each direction. ~~It has been conventional drilling practice and experience to locate and document every well within 500' in each direction from the lateral path, but only actively monitor 100' in each direction during the hydraulic fracturing phase. The results have proven effective.~~

There has been no questionnaire template presented as part of the rulemaking affording operators the chance to review and comment on the language and the scope of inquiry. It is also unclear what will be acceptable "proof" that a questionnaire has been submitted to a landowner in any number of scenarios resulting in a questionnaire that is not completed and returned.

Regarding **Temporary Storage** (§ 78.56) and the >1,000 square feet actuation footprint necessitating a 2 to 1 slope, the Department is essentially mandating a much larger location footprint to accommodate the drill cuttings and fluid returns. This will both displease landowners and increase the cost of exploration resulting in a feasibility tipping point. If the footprint could be enlarged to 2,500 square feet before the 2 to 1 slope actuation, this would permit the conventional operators to continue to appease the landowners while efficiently managing their drilling returns.

Regarding **Control, Storage and Disposal of Production Fluids** (§ 78.57), to require additional, monthly documentation on Department forms is an unnecessary burden of record keeping placed on the operators. Most wells are visited multiple times during a month and any sign of potential appurtenance failure is remedied in the course of best management practices. A more practical solution would be for the operators to make monthly inspections as part of their routine maintenance and record keeping and submit a permanent inspection record to the Department in an added subject column (Tanks) in their annual Mechanical Integrity Assessment submission.

This concludes my testimony and comments. On behalf of PIOGA and its membership, I would like to express my gratitude for your patient consideration.

D. Marc Jacobs, Jr.
Pennsylvania Independent Oil and Gas Association Member
Penneco Oil Company Senior Vice President

Lois Hluhan

20 Rocky Lane

Eighty Four Pa. 15330

I am speaking as a homeowner—I have just 1 acre--sitting next to a projected Marcellus shale pad. I have just survived over 3 years of strip mining on the same property. The dirt--the dust clouds-- the noise--being awakened by track dozers at 6:00am, whether I wanted to be up or not.-- and the smell of kerosene--both my sinuses and my organic garden were impacted. Now I am looking forward to how many more years of my life being disrupted by a projected Marcellus shale pad on the same property. My water comes from a well, I worry about it being contaminated. I would likely be under the lights, no more sleeping for me, and then there's the blasting, digging and all other noises consistent with drilling a well. Why do I have no rights. These landowner have the rights to upset my life, but I seem to have none. They are allowed to negatively impact me but again I have no rights, no way to stop them

I had been looking forward to my retirement, having a peaceful life taking care of my home and gardens. All that is gone. I had instead dirt, noise, and a shaking home. It is a good thing I did not want to move, my home is now worth nothing--who in their right mind would want to live next to a Marcellus shale pad. Even the gas under my house will basically be stolen, I will receive no royalties since my contract is with Range and Rice is the company digging the well. I'm sure the drilling company makes a nicer profit when they don't have to pay royalties. Again my rights are taken away.

Since companies must have 600 acres to place a pad why is it not mandated for them to keep the pads as far away from dwellings as possible to limit the impact from the noise, the lights , the dirt, and the shaking and vibrations. Give us our lives back.

Thank you for your time

Lois Hluhan



Chapter 78 Advanced Notice of Final Rulemaking - Comments

My name is James Pritt and I represent Enervest Operating, LLC. I serve as the Company's Regulatory Manager. I would like to thank PA DEP and the EQB for the opportunity to make public comment.

I am speaking to the proposed rules as they relate to Chapter 78 today as our Operations focus on conventional oil and gas production primarily in Northwest, PA, where we employ thirty five employees. As a producer, our company and its thirty five Pennsylvania employees have firsthand experience with and put forth extraordinary efforts to be good stewards to the environment and good neighbors to the communities where we work and live.

Enervest has always supported and is pleased with the development of separate rules governing the conventional and unconventional business models since the advent of the horizontal shale drilling started. We believe the size and scope of operation are in such stark contrast to each other that rules governing such operations should be separated and developed along different paths with the goal of protecting the environment and we applaud the recent separation of these rules in Pennsylvania.

In regard to the proposed rules governing the conventional side of our business we offer the following specifics as they are currently proposed.

- 1) Section 78.66 – The Pennsylvania Land Recycling Program Act 2 sets forth requirements governing the remediation of releases greater than 42 gallons yet the proposed rules result in additional requirements, Act 2 has no provision that site characterization be completed within 180 days and no provisions that a remedial action plan be submitted within 45 days of submittal of a site characterization report. In addition, Act 2 does not require the submittal of quarterly remedial action progress reports. We are not sure why the oil and gas industry is held to different standards than other industries falling under Act 2.
- 2) Section 78.1 – The definition of gathering is inconsistent with the long standing recognized rules per API RP 80 as recognized by 49 CFR Part 192. In addition the definition does not follow Act 127 and PA One Call Law. The definition should read “A pipeline used to transport oil, liquid hydrocarbons or natural gas from a production facility to a transmission line “.
- 3) Section 78.1 – The definition of Other Critical Communities implies that PA DEP is requiring protection for non-listed species that are neither threatened or endangered, and that potential universe of such species and non-species resources can expand indefinitely without any notice to or input from the public. The new definition and new process changes the PNDI results and adds many new resources that would require mitigation. In essence, the definition does not match PNDI policy. Other industries are not required to provide such protection for non-listed species.
- 4) Section 78.15 – Wellhead Protection Area and Wellhead Protection Plan are not defined terms and need to be added to definitions.
- 5) Section 78.51 – Operators should not be required to restore waters that did not meet PASDWA standards as a result of testing and prior to spud to a higher standard.
- 6) Section 78.52 – The timing of providing test results is incorrect and needs to be worked on. We believe in predrilling or pre-alteration surveys and we as a normal course of our business perform such tests in order to protect ourselves from unwarranted and unfounded claims. The timing of such tests should be considered so the Operator is protected from frivolous claims not related to oil and gas activities.



ENERVEST

(Comments Continued).

- 7) Section 78.52a. – This section seems to primarily apply to the unconventional side of the business. Conventional well spacing has the effect to mitigate and minimize the majority of concerns regarding the identification and location of abandoned wells. Perhaps this section should be referenced as a best practice for the conventional operator. The questionnaire will result in a number of issues from timing to drilling to completion. Questions abound such as will the permit be issued if no responses are received. PA DEP should have an active database showing the orphaned and abandoned wells. Operators have for years relied on private and public databases at the State, County and Township level to identify orphaned and abandoned wells prior to application for permits to drill. The State should work closely with Counties and Townships to help identify orphaned wells. This process would help all stakeholders involved.
- 8) Section 78.57 – PA DEP encourages the road spreading of low salinity brine in one instance but requires doubled walled tanks or secondary containment for new tanks. Documented monthly inspections could be done quarterly and included as part of MIA reporting. Administratively, the on line MIA reporting process would be an efficient and effective way to accomplish this goal. We do not see the need to do documented monthly inspections as our pumpers check our tanks every time they visit the well which is on a weekly basis. As far as documented inspections are concerned the surrounding states require documented inspections to be done on an annual basis. In addition, under PA Spill Reporting Requirements any brine spills that may cause or threaten pollution to the waters of the Commonwealth must be reported within 24 hours and small spills (less than 42 gallons) not causing or threatening pollution to the waters of the Commonwealth at a well site must be remediated quickly.
- 9) Section 78.57a – New centralized tank batteries are rarely built for conventional wells so we are not sure why there is so many proposed rules in this area when it mostly applies to unconventional well development. Even so we do not understand how the various buffer distances in the various scenarios were developed and on what basis or source they were developed from. This section lacks clarity is not clearly defined.
- 10) Section 78.65 – PA DEP should not dictate or change the agreements between the Operator and Landowner as a result of previous negotiations in regard to storing of equipment on Landowner's surface. Restoration should be confined to areas inside the limit of disturbance. E&S Plans cover many of the concerns in this section so we are not sure why these are being proposed in this section. In addition, E&S Plans are posted at the well locations.
- 11) Section 78.73 – If an Operator cannot identify the Operator of the inactive well then what?
- 12) Generally – All reference to hydraulic fracturing in the proposed rules should be deleted as one of the parameters used in defining conventional and unconventional wells. As we know, almost 99 percent of all wells, regardless of formation or type, are fracture stimulated and have been for decades.

In conclusion, we believe there is room for much work and improvement to these proposed rules and if not amended will result in further adverse effects to the sustainability of continued production from the conventional side of our business. The added cost and administrative burden resulting from the rules as proposed combined with forecasted low commodity prices over the next few years will result in decreased future development and shut-ins on existing production. Many conventional operators have already placed their future drilling programs on hold as seen from the permit activity and are currently shutting in wells even as we speak. The conventional side of the business is in a survival mode presently and is experiencing negative margins already and adding additional cost will only increase the burden.

Sincerely,

James B. Pritt
Regulatory Manager
Enervest Operating, LLC.

ENERVEST OPERATING, LLC

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My name is Ron Slabe and I thank the DEP for the opportunity to voice my views and those of our organization, Citizens Against Marcellus Pollution, over the proposed regulations.

I would characterize the proposed changes as modest beginnings with the need for far bolder improvements. Always of concern is the notorious Frack Pit, without question the most polluting aspect of today's gas drilling. Last year, we presented you in Harrisburg with a petition and letters with over 17,000 signatures to Ban the Frack Pit, these open impoundments responsible for contaminating our water, soil, and the air we breathe.

What you are giving us, however, in the proposed regulations in place of the **frack pit** is, basically, a **frack tank**, a gigantic above ground-like swimming pool, allowed to be open **at the top** for the **continuing** evaporation of toxins like VOCs and a plastic lined bottom that will also be a **continued** source of leakage of cancer causing frack fluid. At one such tank located at the Trax Farm in Washington County, cars and trucks are **dwarfed** when parked next to the walls of this monstrosity. Needless to say, replacing the frack pit with such tanks is totally unacceptable since such frack tanks are in no way the closed loop system that was demanded and not the closed loop system encouraged by the U.S. Interior Dept. and adopted by such states as New Mexico and Illinois. Instead, you are giving us an **above ground** frack pit. And may God help us **if** the walls of these tanks are made of some cheap foreign material. One can only envision the devastation caused by a **rupture** of those walls. This regulatory change does not provide for the safety and welfare of Pennsylvanians and only a totally closed loop system will suffice in doing so.

Likewise, your allowing for the continued existence of centralized impoundments again is completely inadequate to protect our environment. The **prohibition** of these open waste impoundments must take effect immediately along with any open pits or tanks that are opened and plastic lined. The environmental degradation caused by such containments must end.

In so far as **conventional** drillers who are using **unconventional** fracking methods to frack shallow layers of shale, such drilling must also come under the same regulations pertaining to **unconventional** drillers, since their **unconventional** fracking is even closer to ground water and the danger of polluting this source even greater. Likewise, allowing **conventional** drillers to use road-spreading brine for de-icing and dust suppression is also unacceptable and should be prohibited **and** another reason why unconventional and conventional regulations should **not** be separated.

When it comes to drilling near schools, a **minimum** one-mile setback on drilling near schools & playgrounds is a must. To allow drilling just over 200 feet from

where children learn and play is simply **unconscionable**. Allowing drilling so near to such sites is flirting with disaster. Likewise, failure to include any mention of polluting and noise emitting compressor stations is another area needing your prompt attention.

Finally, I would encourage you to read most carefully the Robinson Township decision handed down by the PA Supreme Court in which the Court provided valuable guidelines of what fiduciary role state and local governments must provide to ensure that Article 1, Section 27 of the PA Constitution is abided by. Use this enlightened ruling to guide you further on the role you must play in forming and providing regulations that protect our environment, as all DEP regulations should **conform** to this Supreme Court Ruling. We, the people, demand that the DEP through its regulatory duties truly act to provide for all the protections guaranteed under that Environmental Rights Amendment. The DEP must start doing the job of protecting us not just through modest means but through bold and decisive action. And let that action begin today!

Submitted by Ron Slabe
516 Angelcrest Drive
Upper Burrell, PA 15068



New Pig Energy

201 Jefferson Ave
Tyrone, PA 16686
May 4, 2015

PA Department of Environmental Protection:

My name is Beth Powell. I am a ninth-generation rural Pennsylvanian who lives in Centre County. I have a chemical engineering degree and an MBA from Penn State.

I work for a Pennsylvania-based company, New Pig Energy, which is a wholly-owned subsidiary of New Pig Corporation. Our parent company has been the world leader in liquid secondary containment for more than 30 years. New Pig Corporation, headquartered in Tipton, PA, provides leak and spill products to over 200,000 industrial sites in over 70 countries.

My company, New Pig Energy, was spun-off in 2013 and employs 32 Pennsylvanians dedicated to helping oil and gas operators protect streams and surface water. We provide secondary containment for drilling and hydraulic fracturing throughout the United States and overseas. Secondary containment is an impermeable barrier designed to prevent releases into the environment. Basically, it is a safeguarding method if the original container fails.

I would like to make five points in this testimony.

First Point: Pennsylvania has the toughest secondary-containment regulations of any state for oil and gas. Other states rely on the federal Spill Prevention, Control, and Countermeasure (SPCC) rule for regulations of oil. Beyond oil, PA DEP also requires secondary containment for flowback water.

Second Point: According to Pennsylvania regulations, a spill occurs when oil or flowback makes contact with soil. At the federal level, a spill occurs when oil makes contact with water. This is one of the reasons that the state violation rate was so high a few years ago. Operators either reported all spills to soil or all spills 5 gallons or greater no matter where they occurred. And they still do, but the sites are now in secondary containment to prevent contact with soil.

Third Point: The Chapter 78a draft is confusing in regards to primary containment versus secondary containment since the general term "containment" is used for both. Aboveground storage structures are primary containment. Secondary containment is the safeguarding around the primary containment. I have included proposed clarifications in the written copy.

Fourth Point: New Pig Energy's business relies on helping operators comply with regulations. This puts us in a unique situation. Increased regulation provides opportunities for new products and new customers. Too much regulation, however, and our customer base shrinks by moving out of Pennsylvania. Having worked with our parent company in a number of diverse industries (such as electric utilities, manufacturing, powerwashing, chemical storage, hazardous waste transportation, etc), oil and gas operators are not bad actors. They are just another industry where spills sometimes occur due to handling large quantities of liquids.

Fifth Point: I would like to thank PA DEP for accepting a number of comments on the last round of review. Establishing chemical compatibility for secondary containment at 72 hours allows time for clean up, but keeps material costs under control. Allowing operators to test rainwater for release, which is the requirement for all other industries in the state, allows secondary containment systems to be utilized through numerous stages without having to be landfilled.

In conclusion, regulations are needed. Business, jobs and opportunities are also needed. It is not easy bringing them together, but the oil and gas industry has made great strides in the last four years.

PROPOSED CLARIFICATIONS FOR CHAPTER 78a

§ 78a.1. Definitions.

Containment system—Synthetic liners, coatings, storage structures or other materials used in conjunction with a primary container that prevent spills to the ground surface or off the well site.

NEW PIG ENERGY comment:

At the federal level (SPCC 40 CFR 112), these containment systems are called "secondary containment" since the primary containment is the container itself. Sections of Chapter 78 refer to "secondary containment" [78a.57 (c), 78a.57(i)(10,11,16)], "containment" [78a.57 (c)] and "emergency containment" [78a.57(j)(12,13,14,15)] in addition to "containment system". The term should be standardized in the regulation. Also adding to the confusion is that aboveground storage, which is primary containment, is also referred to as "containment" [78a.78(i)(8,9)] and "containment structures" [78a.57 (c)].

NEW PIG ENERGY's suggested amendatory language:

Primary Containment— A tank, vessel, pipe, truck, rail car, or other equipment designed to keep a material within it, typically for purposes of storage, separation, processing or transfer of gases or liquids. The terms vessel and pipe are taken to include containment of reservoir fluids within the casing and wellhead valving to the surface.

Secondary Containment—An impermeable physical barrier specifically designed to prevent release into the environment of materials that have breached primary containment. Secondary containment systems include synthetic liners, coatings, dykes, curbing around process equipment, drainage collection systems into segregated oily drain systems, the outer wall of double walled tanks, etc.

§ 78a.56. [Pits and tanks for temporary containment] Temporary storage.

PITS MAY NOT BE USED FOR TEMPORARY CONTAINMENT. AN OPERATOR USING A PIT FOR TEMPORARY STORAGE AT THE EFFECTIVE DATE OF THESE REGULATIONS SHALL PROPERLY CLOSE THE PIT IN ACCORDANCE WITH APPROPRIATE RESTORATION STANDARDS NO LATER THAN ____ (EDITOR'S NOTE: THE BLANK REFERS TO A DATE SIX MONTHS FROM THE EFFECTIVE DATE OF THIS REGULATION).

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

PITS MAY NOT BE USED FOR TEMPORARY *PRIMARY* CONTAINMENT. AN OPERATOR USING A PIT FOR TEMPORARY STORAGE AT THE EFFECTIVE DATE OF THESE REGULATIONS SHALL PROPERLY CLOSE THE PIT IN ACCORDANCE WITH APPROPRIATE RESTORATION STANDARDS NO LATER THAN ____ (EDITOR'S NOTE: THE BLANK REFERS TO A DATE SIX MONTHS FROM THE EFFECTIVE DATE OF THIS REGULATION).

§ 78a.57. Control, storage and disposal of production fluids.

(c) Secondary containment capable of preventing tank contents from entering waters of the Commonwealth is required for all new, refurbished or replaced ABOVEGROUND tanks or other aboveground containment structures approved by the Department, including their associated manifolds, that contain brine and other

fluids produced during operation of the well. If one tank in a series of tanks is added, refurbished or replaced, secondary containment is required for the entire series of tanks. The secondary containment area provided by dikes or other methods of secondary containment open to the atmosphere must have containment capacity sufficient to hold the volume of the largest single ABOVEGROUND tank, plus an additional 10% of volume for precipitation. Compliance with § 78a.64 (relating to containment around oil and condensate tanks) or using double walled tanks capable of detecting a leak in the primary container fulfill the requirements in this subsection.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(c) Secondary containment capable of preventing tank contents from entering waters of the Commonwealth is required for all new, refurbished or replaced ABOVEGROUND tanks or other aboveground *primary containment* structures approved by the Department, including their associated manifolds, that contain brine and other fluids produced during operation of the well. If one tank in a series of tanks is added, refurbished or replaced, a secondary containment is required for the entire series of tanks. The secondary containment area provided by dikes or other methods of secondary containment open to the atmosphere must have capacity sufficient to hold the volume of the largest single ABOVEGROUND tank, plus an additional 10% of volume for precipitation. Compliance with § 78a.64 (relating to containment systems around oil and condensate tanks) or using double walled tanks capable of detecting a leak in the primary container fulfill the requirements in this subsection.

(8) CONTAINMENT STRUCTURES SHALL BE COMPATIBLE WITH THE WASTES STORED, MINIMIZE DETERIORATION TO THE TANK AND COMPLY WITH SECTION 78a.64a (RELATING TO CONTAINMENT SYSTEMS AND PRACTICES AT WELL SITES).

(9) CONTAINMENT AREAS SHALL BE DESIGNED, MAINTAINED AND CONSTRUCTED IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES ADHERING TO NATIONALLY RECOGNIZED CODES OF PRACTICE, SUCH AS NFPS, NACE, ACI OR API AND IN COMPLIANCE WITH STATE AND FEDERAL REQUIREMENTS.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(8) PRIMARY CONTAINMENT STRUCTURES SHALL BE COMPATIBLE WITH THE WASTES STORED, MINIMIZE DETERIORATION TO THE TANK AND COMPLY WITH SECTION 78a.64a (RELATING TO SECONDARY CONTAINMENT SYSTEMS AND PRACTICES AT WELL SITES).

(9) PRIMARY CONTAINMENT AREAS SHALL BE DESIGNED, MAINTAINED AND CONSTRUCTED IN ACCORDANCE WITH SOUND ENGINEERING PRACTICES ADHERING TO NATIONALLY RECOGNIZED CODES OF PRACTICE, SUCH AS NFPS, NACE, ACI OR API AND IN COMPLIANCE WITH STATE AND FEDERAL REQUIREMENTS.

(11) PERMEABILITY OF THE SECONDARY CONTAINMENT SHALL BE LESS THAN 1×10^{-10} CM/SEC AT ANTICIPATED HYDROSTATIC HEAD.

NEW PIG ENERGY comment:

Redundant with (13).

NEW PIG ENERGY's suggested amendatory language:

Delete.

(12) TANKS SHALL HAVE EMERGENCY CONTAINMENT STRUCTURES, SUCH AS DIKE FIELDS, CURBING AND CONTAINMENT COLLECTION SYSTEMS, WHICH CONTAIN RELEASES FROM OVERFILLS, LEAKS AND SPILLS.

(13) PERMEABILITY OF EMERGENCY CONTAINMENT STRUCTURES SHALL BE LESS THAN 1×10^{-6} CM/SEC AT ANTICIPATED HYDROSTATIC HEAD AND BE OF SUFFICIENT THICKNESS TO PREVENT THE RELEASED WASTE FROM PENETRATING THE CONTAINMENT STRUCTURE FOR A MINIMUM OF 72 HOURS AND UNTIL THE RELEASE CAN BE DETECTED AND RECOVERED.

(14) EMERGENCY CONTAINMENT AREAS, SUCH AS DIKE FIELDS, SHALL BE ABLE TO CONTAIN 110% OF THE CAPACITY OF THE LARGEST TANK IN THE CONTAINMENT AREA.

(15) STORMWATER SHALL BE REMOVED FROM THE EMERGENCY CONTAINMENT AREA AS SOON AS POSSIBLE OR WHEN THE WATER IS IN CONTACT WITH THE TANK OR PIPING AND PRIOR TO THE CAPACITY OF CONTAINMENT BEING REDUCED BY 10% OR MORE. MANUALLY OPERATED PUMPS OR SIPHONS AND MANUALLY OPERATED GRAVITY DRAINS MAY BE USED TO EMPTY THE CONTAINMENT. IF DRAIN VALVES ARE USED, THEY SHALL BE SECURED IN THE CLOSED POSITION WHEN NOT IN USE. DISCHARGE OR DISPOSAL OF WASTES FROM THE CONTAINMENT STRUCTURE SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(12) TANKS SHALL HAVE *SECONDARY* CONTAINMENT, SUCH AS DIKE FIELDS, CURBING AND CONTAINMENT COLLECTION SYSTEMS, WHICH CONTAIN RELEASES FROM OVERFILLS, LEAKS AND SPILLS.

(13) PERMEABILITY OF *SECONDARY* CONTAINMENT SHALL BE LESS THAN 1×10^{-6} CM/SEC AT ANTICIPATED HYDROSTATIC HEAD AND BE OF SUFFICIENT THICKNESS TO PREVENT THE RELEASED WASTE FROM PENETRATING THE *SECONDARY* CONTAINMENT FOR A MINIMUM OF 72 HOURS AND UNTIL THE RELEASE CAN BE DETECTED AND RECOVERED.

(14) *SECONDARY* CONTAINMENT, SUCH AS DIKE FIELDS, SHALL BE ABLE TO CONTAIN 110% OF THE CAPACITY OF THE LARGEST TANK IN THE *SECONDARY* CONTAINMENT.

(15) STORMWATER SHALL BE REMOVED FROM *SECONDARY* CONTAINMENT AS SOON AS POSSIBLE OR WHEN THE WATER IS IN CONTACT WITH THE TANK OR PIPING AND PRIOR TO THE CAPACITY OF *SECONDARY* CONTAINMENT BEING REDUCED BY 10% OR MORE. MANUALLY OPERATED PUMPS OR SIPHONS AND MANUALLY OPERATED GRAVITY DRAINS MAY BE USED TO EMPTY THE *SECONDARY* CONTAINMENT. IF DRAIN VALVES ARE USED, THEY SHALL BE SECURED IN THE CLOSED POSITION WHEN NOT IN USE. DISCHARGE OR DISPOSAL OF WASTES FROM THE *SECONDARY* CONTAINMENT SHALL COMPLY WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.

§ 78a.58. [Existing pits used for the control, storage and disposal of production fluids.] Onsite processing.

(c) ACTIVITIES DESCRIBED IN SUBSECTION (b) MUST BE CONDUCTED WITHIN A CONTAINMENT SYSTEM.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(c) ACTIVITIES DESCRIBED IN SUBSECTION (b) MUST BE CONDUCTED WITHIN SECONDARY CONTAINMENT.

§ 78a.64. Containment around oil and condensate tanks.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

§ 78a.64. Secondary containment around oil and condensate tanks.

(b) The containment area provided by the dikes or other method of secondary containment shall have containment capacity sufficient to hold the volume of the largest single tank, plus a reasonable allowance for precipitation based on local weather conditions and facility operation.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions. Act 13 requires 110% sump capacity. The precipitation allowance is from Federal SPCC guidelines.

NEW PIG ENERGY's suggested amendatory language:

(b) *Secondary* containment provided by the dikes or other method of secondary containment shall have *sump* capacity sufficient to hold the volume of the largest single tank, plus *10%*.

(c) Prior to drainage of accumulated precipitation from containment structures, the containment area shall be inspected and accumulations of oil picked up and returned to the tank or disposed of in accordance with approved methods.

(d) After complying with subsection (c), drainage of containment facilities is acceptable if:

(1) The accumulation in the containment facility consists of only precipitation directly to the containment facility and drainage will not cause a harmful discharge or result in a sheen.

(2) The containment drain valve is opened and resealed, or other drainage procedure, as applicable, is conducted under responsible supervision.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(c) Prior to drainage of accumulated precipitation from *secondary* containment, the area shall be inspected, and accumulations of oil picked up and returned to the tank or disposed of in accordance with approved methods.

(d) After complying with subsection (c), drainage of *secondary* containment is acceptable if:

(1) The accumulation in the *secondary* containment consists of only precipitation directly to the *secondary* containment and drainage will not cause a harmful discharge or result in a sheen.

(2) The *secondary* containment drain valve is opened and resealed, or other drainage procedure, as applicable, is conducted under responsible supervision.

§ 78a.64a. Containment systems and practices at [unconventional] well sites.

(a) [This section applies to unconventional well sites.]

[(b)] Well sites shall be designed and constructed using containment systems and practices that prevent spills of regulated substances to the ground surface and to prevent spills from leaving the well site.

[(c)] (b) All regulated substances, including solid wastes and other regulated substances in equipment or vehicles, shall be managed within a containment system. This subsection does not apply to fuel stored in equipment or vehicle fuel tanks unless the equipment or vehicle is being refueled at the well site.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

§ 78a.64a. *Secondary* containment systems and practices at [unconventional] well sites.

(a) [This section applies to unconventional well sites.]

[(b)] Well sites shall be designed and constructed using *secondary* containment systems and practices that prevent spills of regulated substances to the ground surface and to prevent spills from leaving the well site.

[(c)] (b) All regulated substances, including solid wastes and other regulated substances in equipment or vehicles, shall be managed within *secondary* containment. This subsection does not apply to fuel stored in equipment or vehicle fuel tanks unless the equipment or vehicle is being refueled at the well site.

[(e)] (d) Containment systems must meet all of the following:

(1) A containment system must be used on the well site when any equipment that will be used for any phase of drilling, casing, cementing, hydraulic fracturing or flowback operations is brought onto a well site and when regulated substances including drilling mud, drilling mud additives, hydraulic oil, diesel fuel, hydraulic fracturing additives or flowback are brought onto or generated at the well site.

(2) A containment system must have a coefficient of permeability no greater than 1×10^{-10} cm/sec.

(3) The physical and chemical characteristics of all liners, coatings or other materials used as part of the containment system, that could potentially come into direct contact with regulated substances being stored, must be compatible with the regulated substance and be resistant to physical, chemical and other failure during handling, installation and use. Liner compatibility shall satisfy ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners, or other standards as approved by the Department.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions. § 78a.57. Control, storage and disposal of production fluids require static head and 72 hour of chemical compatibility. Same standard should apply here. ASTM Method D5747, Compatibility Test for Wastes and Membrane Liners is a test for "primary containment", not "secondary containment."

NEW PIG ENERGY's suggested amendatory language:

[(e)] (d) *Secondary* containment systems must meet all of the following:

(1) *Secondary* containment must be used on the well site when any equipment that will be used for any phase of drilling, casing, cementing, hydraulic fracturing or flowback operations is brought onto a well site and when regulated substances including drilling mud, drilling mud additives, hydraulic oil, diesel fuel, hydraulic fracturing additives or flowback are brought onto or generated at the well site.

(2) The *secondary* containment system must have a coefficient of permeability no greater than 1×10^{-10} cm/sec *AT ANTICIPATED HYDROSTATIC HEAD AND BE OF SUFFICIENT THICKNESS TO PREVENT THE RELEASED WASTE FROM PENETRATING THE CONTAINMENT STRUCTURE FOR A MINIMUM OF 72 HOURS AND UNTIL THE RELEASE CAN BE DETECTED AND RECOVERED.*

(3) The physical and chemical characteristics of all liners, coatings or other materials used as part of the *secondary* containment system, that could potentially come into direct contact with regulated substances being stored, must be compatible with the regulated substance and be resistant to physical, chemical and other failure during handling, installation and use *FOR A MINIMUM OF 72 HOURS AND UNTIL THE RELEASE CAN BE DETECTED AND RECOVERED.*

[(f)] (e) An operator shall utilize secondary containment when storing additives, chemicals, oils or fuels. The secondary containment must have sufficient containment capacity to hold the volume of the largest container

within the secondary containment area plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment such as a double walled tank. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks. A well site liner that is not used in conjunction with other containment systems does not constitute secondary containment for the purpose of this subsection.

NEW PIG ENERGY comment:

Please provide clarity on "in conjunction", which meanings bearing to reduce confusion.

NEW PIG ENERGY's suggested amendatory language:

[(f)] (e) An operator shall utilize secondary containment when storing additives, chemicals, oils or fuels. The secondary containment must have sufficient containment capacity to hold the volume of the largest container within the secondary containment area plus 10% to allow for precipitation, unless the container is equipped with individual secondary containment such as a double walled tank. Tanks that are manifolded together shall be designed in a manner to prevent the uncontrolled discharge of multiple manifolded tanks. A well site liner *without a berm or sidewall* does not constitute secondary containment for the purpose of this subsection.

[(h)] (g) All surface containment systems shall be inspected weekly to ensure integrity. If the containment system is damaged or compromised, the well operator shall repair the containment system as soon as practicable. The well operator shall maintain records of any repairs until the well site is restored. Stormwater shall be removed as soon as possible and prior to the capacity of secondary containment being reduced by 10% or more.

[(i)] (h) Regulated substances that escape from primary containment or are otherwise spilled onto a containment system shall be removed as soon as possible. After removal of the regulated substances the operator shall inspect the containment system. A Department approved leak detection system capable of rapidly detecting a leak shall satisfy the requirement to inspect the integrity of a subsurface containment system. Groundwater monitoring wells do not constitute a leak detection system for the purpose of this subsection. If the containment system did not completely contain the material, the operator shall notify the Department and remediate the affected area in accordance with § 78a.66 (relating to reporting and remediating releases).

[(j)] (i) Stormwater that comes into contact with regulated substances stored within the secondary containment area shall be managed as residual waste.

[(k)] (j) Inspection reports and maintenance records shall be available at the well site for review by the Department.

[(l)] (k) Documentation of chemical compatibility of containment systems with material stored within the system shall be provided to the Department upon request.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions. Subsurface is not an allowed secondary containment according to (f) of this section.

NEW PIG ENERGY's suggested amendatory language:

[(h)] (g) *Secondary* containment systems shall be inspected weekly to ensure integrity. If the secondary containment is damaged or compromised, the well operator shall repair as soon as practicable. The well operator shall maintain records of any repairs until the well site is restored. Stormwater shall be removed as soon as possible and prior to the capacity of secondary containment being reduced by 10% or more.

[(i)] (h) Regulated substances that escape from primary containment or are otherwise spilled into *secondary* containment shall be removed as soon as possible. After removal of the regulated substances the operator shall inspect the *secondary* containment.

If secondary containment did not completely contain the material, the operator shall notify the Department and remediate the affected area in accordance with § 78a.66 (relating to reporting and remediating releases).

[(D)] (k) Documentation of chemical compatibility of containment systems with material stored within the system shall be provided to the Department upon request.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

[(D)] (k) Documentation of chemical compatibility of the *secondary* containment with material stored within the system shall be provided to the Department upon request.

§ 78a.65. Site restoration.

(1) *POST-DRILLING* – WITHIN 9 MONTHS AFTER COMPLETION OF DRILLING A WELL, THE OWNER OR OPERATOR SHALL UNDERTAKE POST-DRILLING RESTORATION OF THE WELL SITE IN ACCORDANCE WITH A RESTORATION PLAN DEVELOPED IN ACCORDANCE WITH SUBSECTION (b) AND REMOVE ALL DRILLING SUPPLIES, EQUIPMENT AND CONTAINMENT SYSTEMS NOT NECESSARY FOR PRODUCTION OR NEEDED TO SAFELY OPERATE THE WELL.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(1) *POST-DRILLING* – WITHIN 9 MONTHS AFTER COMPLETION OF DRILLING A WELL, THE OWNER OR OPERATOR SHALL UNDERTAKE POST-DRILLING RESTORATION OF THE WELL SITE IN ACCORDANCE WITH A RESTORATION PLAN DEVELOPED IN ACCORDANCE WITH SUBSECTION (b) AND REMOVE ALL DRILLING SUPPLIES, EQUIPMENT AND *SECONDARY* CONTAINMENT NOT NECESSARY FOR PRODUCTION OR NEEDED TO SAFELY OPERATE THE WELL.

(iii) DRILLING SUPPLIES AND EQUIPMENT NOT NEEDED FOR PRODUCTION MAY ONLY BE STORED ON THE WELL SITE IF EXPRESS WRITTEN CONSENT OF THE SURFACE LANDOWNER IS OBTAINED AND THE SUPPLIES OR EQUIPMENT ARE MAINTAINED IN ACCORDANCE WITH § 78a.64a (RELATING TO CONTAINMENT SYSTEMS AND PRACTICES AT UNCONVENTIONAL WELL SITES).

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(iii) DRILLING SUPPLIES AND EQUIPMENT NOT NEEDED FOR PRODUCTION MAY ONLY BE STORED ON THE WELL SITE IF EXPRESS WRITTEN CONSENT OF THE SURFACE LANDOWNER IS OBTAINED AND THE SUPPLIES OR EQUIPMENT ARE MAINTAINED IN ACCORDANCE WITH § 78a.64a (RELATING TO *SECONDARY* CONTAINMENT SYSTEMS AND PRACTICES AT UNCONVENTIONAL WELL SITES).

(4) THE REMOVAL OF ALL DRILLING SUPPLIES AND EQUIPMENT NOT NEEDED FOR PRODUCTION, INCLUDING CONTAINMENT SYSTEMS.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

(4) THE REMOVAL OF ALL DRILLING SUPPLIES AND EQUIPMENT NOT NEEDED FOR PRODUCTION, INCLUDING *SECONDARY* CONTAINMENT.

§ 78a.66. Reporting and remediating SPILLS AND releases.

(ii) A spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by a containment system.

NEW PIG ENERGY comment:

See issue with "primary containment" and "secondary containment" definitions.

NEW PIG ENERGY's suggested amendatory language:

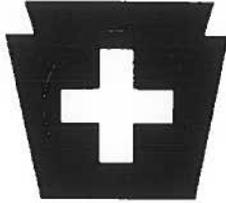
(ii) A spill or release of 5 gallons or more of a regulated substance over a 24-hour period that is not completely contained by *secondary* containment.

Thank you for your time in considering our comments. Our Pennsylvania business relies on the continuing success of drilling in Pennsylvania in conjunction with environmentally safe practices.

Sincerely,

A handwritten signature in black ink, appearing to read "Beth Powell", with a stylized flourish at the end.

Beth Powell
Vice-President and General Manager



SWPA-EHP

SOUTHWEST PENNSYLVANIA ENVIRONMENTAL HEALTH PROJECT

www.environmentalhealthproject.org

Testimony to Department of Environmental Protection

Wednesday, April 29, 2015

Raina Rippel, Director

Southwest Pennsylvania Environmental Health Project

My name is Raina Rippel, I am a resident of Washington County, PA, and for the past 4 years, I have been the Director of the Southwest Pennsylvania Environmental Health Project. I work with a team of public health professionals, researchers, and healthcare providers to address health concerns plausibly linked to unconventional natural gas development (UNGD) and related industrial activities.

First, on behalf of EHP, we see this as a positive first step towards making regulations stronger. I commend the DEP on the following proposed changes:

- Distinguishing between conventional and unconventional drilling activities. This distinction brings into focus the differing emissions and public health implications of the two types of extraction and production of shale gas.
- Proposing a move towards electronic filing of records—this will be positive and important if e-filing leads to greater and more timely access to permitting data and use and release of chemicals; and records on accidents and remediation. All such information also ought to go in hard copy to relevant residents, local health officials and first responders.

In essence:

Setback distances are inadequate.

Schoolchildren are at risk.

The body of evidence proves this to be true—we can now characterize the short-term health impacts, and we can safely predict the long-term health impacts.

My comments tonight will focus on regulatory changes particularly as they pertain to schools and the protection of the health of schoolchildren. This is important for several reasons:

- As of May 2013, it has been reported that, in Pennsylvania, 147 schools were within one mile of a permitted well site. Twenty-six of those were within a half-mile. Another 147 had been permitted within a mile of well sites. (PennEnvironment report, 2013). **There are currently 75 schools in SWPA within one mile of active wells.**
- Activities on drill pads and during other stages of gas production and transport emit dangerous contaminants into the air and sometimes onto soil or bodies of water.
- Children are particularly vulnerable to environmental health threats.
- Accidents can and do occur and may pose challenges unique to schools.

SETBACK REGULATIONS FROM SCHOOLS

The two setbacks mentioned explicitly for schools are: 1) a well site permitted within 200 feet of common areas on a school's property or a playground may require additional notification of the public agency; and 2) minimum setback distance of 300 yards from a centralized tank storage site.

These two setbacks are inadequate to protect children from routine emissions, periodic high emissions and accidents or uncontrolled events.

EMISSIONS/EXPOSURES

Emissions from well pad and other parts of the UNGD extraction, treatment, and transport process are well documented and the literature on health effects associated with emissions is growing rapidly. A database of citations on the environmental and public health implications of UNGD created by Physicians, Scientists and Engineers for Health Energy includes approximately 480 peer-reviewed articles from nearly 150 journals.

Air exposures would be the most likely route for emissions to get to school grounds and inside school buildings. Research has confirmed the presence of Volatile Organic Compounds (VOCs) (including Colborn et al), Polycyclic Aromatic Hydrocarbons (PAHs) (Paulik et al), and Fine and Ultrafine Particulate Matter (including Moore et al).

- VOCs have short term (eye and respiratory tract irritation, skin reaction, headaches, dizziness) and long term effects (liver, kidney, and central nervous system damage, some VOCs are known or suspected carcinogens).
- PAHs are associated with respiratory distress and cancer risk.
- PM is associated with decreased lung function, aggravated asthma symptoms, exacerbated cardiovascular disease, low birth weight, and cancer.

Emissions produce a range of health effects and research is beginning to show that health effects and health risks are greater the closer the proximity to UNGD and/or the greater density of UNGD sites near an individual's home, school or workplace.

- Rabinowitz
- McKenzie
- Paulik

SCHOOL CHILDREN AND RISK

Overall, children are at higher risk from air and water contamination than are adults. This has been well established:

- Children have higher respiratory rates and breathe a greater volume of air than adults do relative to their body size. As a result, children exposed to air contaminants breathe in more toxics per pound of body weight than adults.
- Children accumulate more toxins in their bodies than adults. Their bodies are still maturing and they cannot metabolize some toxicants as well as adults. They don't detoxify as efficiently.
- Children's lungs are still developing and they have narrower airways than adults. Children are more vulnerable to the harmful effects of ambient air pollutants. Children spend more time engaged in vigorous activity outside.
- Children's brains are still developing. Many toxic agents are known to interfere with developmental processes within the brain.¹

Unfortunately, our regulatory and public health systems, in determining the maximum dose allowable for certain air pollutants or other industrial-type exposures, are typically set by OSHA or otherwise are based on a workplace-type exposure for an adult male. Our regulations and our healthcare system typically overlooks the increased danger to children, other vulnerable populations (pregnant, sick and/or elderly residents) and the fact that residents may be exposed 24/7 to these industrial activities.

ACCIDENTS or UNCONTROLLED EVENTS

There is no question that accidents occur at UNGD sites. Multiple times in the last few years in our region, we have seen explosions or fires, injuries and fatalities occur at well sites and compressor stations. Focusing solely on Pennsylvania:

- Dunkard Township (Greene County): Fire at well pad + truck containing propane. One injury and one death of a 27 year old field service technician. Twelve hours after the explosion occurred a control crew was flown in from Houston TX and began trying to control the fire. Fire so intense that firefighters had to pull back.
- Indiana Township (Allegheny County): Natural gas well exploded. Two workers killed. Emergency crews began trying to put the fire out with foam but failed. Tanker trucks were then brought in. Control crew from Houston TX flown in.
- Avella (Washington County): Fire caused by a flash fire in storage tanks used to hold natural gas liquids. Three people injured. Two of them had to be flown from the site with acute injuries.
- Shenango Township (Mercer County): Fire at a gas well pad – separator necessitated the evacuation of 15-20 nearby residents.

Accidents at shale extraction or production sites pose dangers to schools and children in three primary ways. The first is the exposure to chemicals or particles produced or dispersed by the accident; the second is the inadequate chemical information first responders often have; and the third is the difficulty of quickly and safely evacuating a school full of children and staff and getting them the necessary medical attention.

In summary, EHP's bottom line is that the science is available and is rapidly growing, to define a **safer** minimum distance for UNGD in relation to schools and other vulnerable, captive populations. There is no doubt in my mind, based on EHP's work, that a minimum of one mile setback will be far more health protective than 300 yards. Locating a well pad within 200 feet of school property is simply too close. There are no conditions, at this time, that would allow for a UNGD drill site to coexist with a school safely.

¹ Environ Health Perspect. Sep 1995; 103(Suppl 6): 73–76.

HALLATON

ENVIRONMENTAL LININGS

May 4, 2015 Chapter 78 Public Hearing, Williamsport, PA

- **Todd Harman Founder/President of Hallaton, Inc. for 22 years as an installer of landfills and containment structures, Also President of the Board for IAGI (International Association of Geosynthetic Installers) for the past 4 years.**
- **PA DEP already has good specifications to contain and store the liquids used in the drilling and hydraulic fracturing in the oil and gas industry. To move to above ground storage for all of the storage is not necessary. This puts many more lives at risk.**
- **A properly designed and installed lined lagoon that can be tested at any time to confirm that it is still a fully functioning system is the best method. PA DEP already uses this system when landfills are designed. There are a lot more hazardous materials in some of the specialty landfills. Our employees are required to be 40 hour hazardous waste trained to get in some of the worst sites.**
- **We have installed many landfills in the past 22 years and they are still used to contain much more hazardous materials than the brine water used in Oil and Gas exploration. Impoundments have been used in the storage of the mustard agent that is being disposed of at various military bases in the U.S. Hallaton has installed many of these systems, without any releases.**
- **Problems with aboveground storage systems, as in the spill last year at the Elk River chemical spill near Charleston, WVA. It wasn't just one hole that was found after the release, but actually many. The same company that ran the facility where the leaks occurred had at least 3 other releases within a few years.**



Hallaton Inc / 1206 Sparks Rd / Sparks / MD 21152 / USA
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H



- **There is a great source of information at Drexel University and the reports that have been written are specific about the use of in ground impoundments. Dr. Robert Koerner and Dr. George Koerner are considered to be the best in the field. If there are any failures or problems around the world, the Koerners are called to lead the investigation and find the cause of failure. A document that was sent to PA DEP is attached.**
- **The impoundments can be inspected and tested in place to assure containment of the liquids. There is a method where a low voltage current is used to scan the entire lining system and can find a hole the size of a pin. This test can be run at any time in the life of the impoundment.**
- **The biggest problem with the impoundments in the past has been the lack of a concise specification. Using a solo 30 mil liner on top of a rough subgrade is going to fail. A double lined system that is tested and documented will give years of service, the same as the landfills that are in use in every state and in every county in the United States.**
- **There already is a good specification in the requirements that has a double lined system with a testing layer for quality control.**
- **In closing there are better ways of storing the liquids used in Oil and Gas production. Take advantage of the specifications and details that are already in use by the PA DEP Waste Division for Landfill use.**

Todd Harman

President, Hallaton, Inc.



Geosynthetic Institute
475 Kedron Avenue
Folsom, PA 19033-1208 USA
TEL (610) 522-8440
FAX (610) 522-8441



March 10, 2014

Environmental Quality Board
P. O. Box 8477
Harrisburg, PA 17105-8477

RE: Proposed Amendments to 25 Pa-Code, Chapter 78, Subchapter C

Dear All,

We represent 72 firms and agencies dealing with the proper development and use of geosynthetic materials including "synthetic flexible liners" which are called "geomembranes" by many other organizations. Among our 18 agency members is the Pennsylvania Department of Environmental Protection with Steve Socash as our contact person... see our website at www.geosynthetic-institute.org for details. This communication has two major points which we ask you to seriously consider as you go forward with your regulations.

1. The original Subchapter C – Environmental Protection Performance Standards has a 1×10^{-7} cm/sec maximum permeability for the synthetic flexible liner being used. This is a ridiculously high value and represents a typical clay or silt soil. Geomembranes have permeabilities down to 1×10^{-13} cm/sec and should be referenced and regulated as such. The agency is confusing everyone (including the public) by having such a high value representing the liner material for all types of containment pits.
2. *The proposed January 15, 2014 regulation banning the use of lined pits is completely inappropriate.* A properly lined geomembrane pit manufactured with polymers such as high density polyethylene (HDPE) will outlast steel storage tanks by decades.* Attesting to this established fact is that all landfills and surface impoundments for nonhazardous and hazardous solid and liquid wastes are lined accordingly. Their performance has been documented over time and with the use of double lined systems allows for the development of an "action leakage rate" for ultimate security of adjacent land and waters.** Your proposed banning of geomembrane lined pits for flowback and

*"Lifetime Prediction of Laboratory UV Exposed Geomembranes," by R. M. Koerner, G.R. Koerner, Y. G. Hsuan and W. K. Wong, GRI Report #42, January 3, 2013, 37 pgs.

**"Assessment and Recommendations for Improving the Performance of Waste Containment Systems," by R. Bonaparte, D. E. Daniel and R. M. Koerner, EPA/600/R-02/099, December 2002, 950 pgs.

production drilling waters flies in the face of the entire solid and liquid waste technology as practiced by the U.S. EPA and every state agency (including Pennsylvania) as well.

As a Pennsylvania resident my entire life and working with the PaDEP since its original founding, I ask you to re-consider your stance insofar as pit lining for flowback and production waters at drilling sites and operations. As you likely know the potential for contamination of these drilling fluids pales into insignificance in comparison to hazardous, and even nonhazardous, leachate from the solid and liquid waste industries.

Very truly yours,

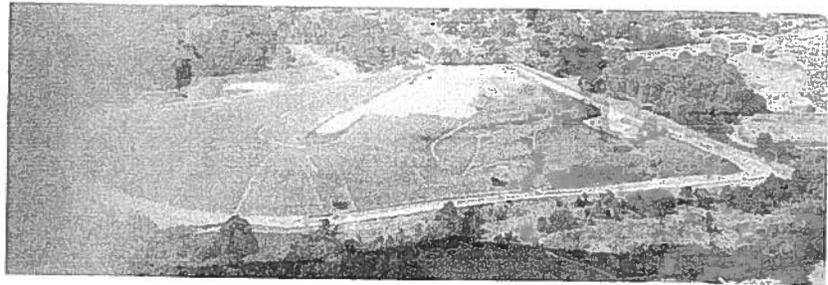
Robert M. Koerner, Ph.D., P.E., NAE
Director Emeritus
Geosynthetic Institute

Attachment: resumé

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Geomembrane Installation Guidelines

Polyethylene Installation Guideline

This specification includes furnishing and installing HDPE and LLDPE geomembranes with a formulated sheet density of 0.940 g/cc or greater associated with HDPE geomembranes and a formulated sheet density of 0.939 or less for LLDPE geomembranes. Geomembranes with both smooth and textured surfaces are included. [English Installation Guide](#)

Esta especificación incluye el suministro e instalación de geomembranas de PEAD con una densidad formulada del plano de 0.940 g/cm³ o mayor. Esto incluye geomembranas tanto lisas como texturizadas. [Especificación para la Instalación de Geomembranas](#)

Guideline for Installation of Factory Fabricated Lightweight ≤ 0.64 mm (25 mil) Thickness Geomembranes

This guideline is an installation guideline for factory fabricated fabric-supported lightweight geomembranes (≤ 0.64 mm or ≤ 25 mil in thickness as measured by ASTM D5199, D751 or D1777). This guideline is designed to provide a minimum set of standards for site installation. However, depending on the complexity and project specific requirements, a qualified design engineering firm may be required for design and installation specifications of the geomembrane. [Factory Fabricated Lightweight Installation Guidelines](#)

Guideline for Installation of Factory Fabricated Heavyweight > 0.64 mm (25 mil) Thickness Geomembranes

This guideline is an installation guideline for factory fabricated fabric-supported heavyweight geomembranes (> 0.64 mm or > 25 mil in thickness as measured by ASTM D5199, D751 or D1777). This guideline is designed to provide a minimum set of standards for site installation. However, depending on the complexity and project specific requirements, a qualified design engineering firm may be required for design and installation specifications of the geomembrane. [Factory Fabricated Heavyweight Installation Guidelines](#)

Guideline for Installation of Factory Fabricated Compounded 0.25 to 1.52 mm (10 - 60 mil) Thickness Unsupported Geomembranes

This document is an installation guideline for factory fabricated compounded unsupported geomembranes of 0.25 to 1.52 mm (10 - 60 mil) thickness. The geomembranes covered in this guideline include the following polymers: Chlorosulfonated Polyethylene (CPSE); Polyvinyl Chloride (PVC) and alloys of PVC with other polymers; alloys with Ethylene Interpolymer Alloy (EIA); alloys with nitrile or other types of rubber; blends and alloys with other compatible polymers; Ethylene Propylene Diene Monomer (EPDM). This guideline is designed

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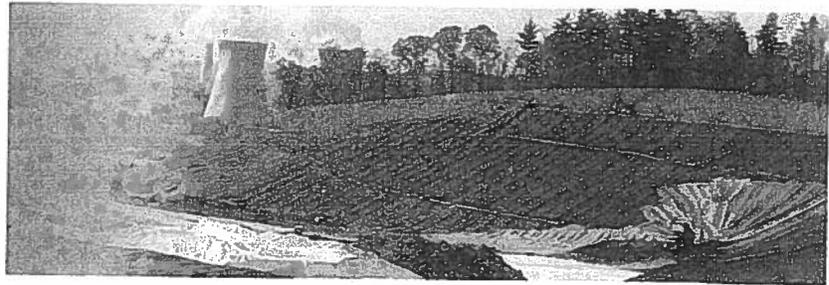
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About CWT

IAGI's Certified Welding Technician (CWT) program recognizes the knowledge, experience and skill of those technicians who hold the certification.

Engineers benefit from IAGI's CWT program because certification verifies that the welders on their job have experience in geomembrane welding and meet industry standards of skill for those geomembranes they are certified in. IAGI encourages all engineers to require that any welding done on their jobsite be done with CWTs.

IAGI developed the Polyethylene, PVC, Reinforced and EPDM geomembrane welder's certification programs so installers could define standards of proficiency, recognize the knowledge, experience and skills of installers, and reward those who qualify with industry recognition.

Member companies who have invested resources in training and testing their welding technicians take pride in the skill of their welding technicians. IAGI encourages you to use companies that have made this commitment to quality on your next job!

[Click here](#) for a list of companies that employ CWTs



Tenets of IAGI's Certified Welding Technician's Program (CWT):

- Raising the level of professionalism in the geomembrane industry
- Commitment to meeting high standards of field performance

The International Association of Geosynthetic Installers

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2014 Elk River chemical spill

Coordinates: 38°22′7.98″N 81°36′23.82″W﻿ / ﻿

From Wikipedia, the free encyclopedia

The **Elk River chemical spill** occurred on January 9, 2014 when crude 4-methylcyclohexanemethanol (MCHM) was released from a Freedom Industries facility into the Elk River, a tributary of the Kanawha River, in Charleston in the U.S. state of West Virginia.

The chemical spill occurred upstream from the principal West Virginia American Water intake and treatment and distribution center. Following the spill, up to 300,000 residents within nine counties in the Charleston, West Virginia metropolitan area were without access to potable water. The areas affected were portions of Boone, Clay, Jackson, Kanawha, Lincoln, Logan, Putnam, and Roane counties and the Culloden area of Cabell County.

Crude MCHM is a chemical foam used to wash coal and remove impurities that contribute to pollution during combustion. The "do-not-use" advisory for drinking water from West Virginia American Water's system began to be gradually lifted by West Virginia state officials on January 13 based upon "priority zones."

On Tuesday, January 14, the company revealed that the tank, which leaked about 7,500 gallons into the ground by the Elk River, had also contained a mixture of glycol ethers known as PPH, with a similar function as MCHM.

The chemical spill was the third chemical accident to occur in the Kanawha River Valley within the last five years. On June 12, 2014 another spill of containment water occurred at the same site.^[1]

2014 Elk River chemical leak

[[File:2014_Elk_River_chemical_spill_affected_pong

png|250px|upright=1.1]]

Counties (*pictured*) in West Virginia affected by the 2014 Elk River chemical spill.

Date	January 9, 2014
Location	Freedom Industries (Charleston facility) 1015 Barlow Drive Charleston, West Virginia United States
Coordinates	38°22′7.98″N 81°36′23.82″W﻿ / ﻿
Cause	Release of up to 7,500 US gallons (28,000 litres; 6,200 imperial gallons) of crude 4-methylcyclohexanemethanol into the Elk River
Participants	Freedom Industries West Virginia American Water
Outcome	Up to 300,000 residents within nine counties in the Charleston, West Virginia metropolitan area were without access to potable water
Injuries	169+ affected 14 hospitalized

Contents

- 1 Freedom Industries
- 2 4-Methylcyclohexanemethanol
- 3 Incident
 - 3.1 Local residents
- 4 Government response

- 5 Threat to human health
- 6 Environmental impact and cleanup
- 7 Resulting closures
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- 9 Outcome
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Freedom Industries

Freedom Industries was founded in 1992 by Gary Southern, and Carl L. Kennedy II.^{[2][3]} On December 31, 2013, Freedom Industries merged with three other companies, Etowah River Terminal, Poca Blending, and Crete Technologies.^{[2][3]} Southern remained as president of the newly formed company,^[2] until the company filed for bankruptcy eight days after the spill.^[4] The company distributed chemicals used in coal mining.^[2]

Freedom Industries' Charleston facility was located along the Elk River, approximately 1.5 miles (2.4 km) upstream from the river's confluence with the Kanawha River,^[5] Previously in use by Etowah River Terminal, the facility stored chemicals in 14 storage tanks with a capacity of 4 million gallons.^[6] The facility stored chemicals, but did not conduct coal cleaning. Eastman Chemical Company was the manufacturer of the crude MCHM.^{[7][8]} Federal and West Virginia state regulators had not inspected the Freedom Industries chemical storage site in Charleston since 1991 when the facility was owned by Pennzoil, according to the West Virginia Department of Environmental Protection (DEP).^{[9][10]} Under state law, the facility had been required to have only an industrial storm water permit, which it possessed.^[9] Freedom Industries was required to test the rain runoff every quarter, and send the results to the DEP.^[9]

Under the federal Emergency Planning and Community Right-to-Know Act, Freedom Industries filed its "Tier Two" form in February 2013, which contained detailed information about each chemical it was storing at its Charleston facility.^[11] Following its filing of the tier two form, West Virginia state emergency response officials and Kanawha County emergency planners and responders received copies.^[11] These entities received copies of the form under law so that its chemical inventory information could be utilized to prepare plans for possible accidents.^[11]

4-Methylcyclohexanemethanol

4-Methylcyclohexanemethanol (MCHM), or more appropriately 4-methylcyclohexylmethanol, is an organic compound with the formula $\text{CH}_3\text{C}_6\text{H}_{10}\text{CH}_2\text{OH}$. Classified as an alcohol, it exists as two isomers with similar properties. MCHM is a colorless oil with an^[12] odor of licorice.^[13]

The amount of reliable information of this chemical is still unknown. Further data from Eastman's internal studies was released after the Elk River, West Virginia (2014) spill, including the studies upon which the LD-50 estimate was based and one 28-day study of oral toxicity of pure MCHM which concluded that 400 mg/kg doses were associated with erythropoietic, liver, and kidney effects, though these were not considered more than "minor toxicity" and the "no observed effect" level was considered to be 100 mg/kg/day.^[43]

Crude MCHM is a chemical foaming agent utilized in the processing of coal at coal preparation plants to remove impurities that contribute to pollution during combustion.^{[17][14][15][16]} The chemical washes coal in a process known as "froth flotation," which involves the separation of sand-size particles of coal from the surrounding rock within a tank of water or other solution.^[16] MCHM is utilized in about 20 to 25 percent of coal preparation plants in West Virginia.^[16]

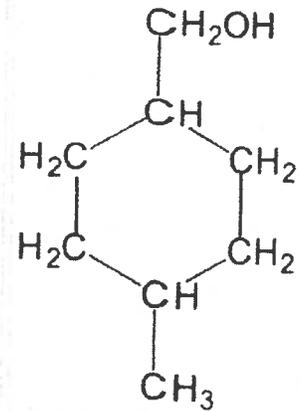
MCHM is not used in the majority of West Virginia's coal preparation plants, because it is only used to produce coal for metallurgical purposes, a type of coal known as "coking coal" and most West Virginia plants process coal that is to be used for the generation of electricity.^[16]

Diesel fuel was originally used for the froth flotation process, but it was replaced by MCHM because of air emissions regulations.^[16]

Glycol ethers are a group of solvents based on alkyl ethers of ethylene glycol commonly used in paints. These solvents typically have a higher boiling point, together with the favorable solvent properties of lower-molecular weight ethers and alcohols.⁴⁶

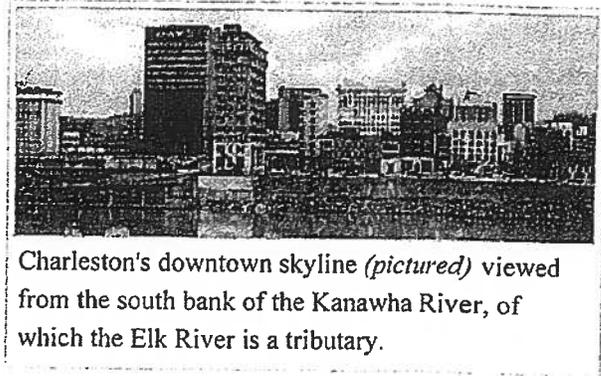
Incident

The spill began on Thursday, January 9, 2014 when up to 7,500 US gallons (28,000 litres; 6,200 imperial gallons) of crude MCHM leaked from a one-inch hole in the bottom of a stainless steel storage tank capable of holding 40,000 US gallons (150,000 litres; 33,000 imperial gallons) and its containment area at Freedom Industries' Charleston facility.^{[14][15][17]} The MCHM leaked from the containment area and into the ground, through which it traveled into the Elk River.^[18] The chemical spill occurred 1 mile (1.6 km) upstream from West Virginia American Water's drinking water intake and treatment and distribution center.^{[14][17][18][19]} The Elk River measured approximately 7 feet (2.1 m) in depth at the time of the spill.^[8]



Chemical structure of 4-methylcyclohexanemeth:

The spill was noticed around mid morning on January 9 by several Charleston area residents when they began to notice a "sweet smell"(like Licorice) in the air.^{[2][14][17][18]} DEP began receiving odor complaints from Charleston residents at 8:15 a.m.^[20] According to Freedom Industries, two employees noticed leakage from the tank into the containment area around 10:30 a.m. on January 9.^{[5][17]} According to the company's president, Gary Southern, workers began cleanup immediately by hauling away the remaining MCHM in the storage tank and vacuuming the spilled MCHM from the ground nearby.^{[5][15][17]}



Charleston's downtown skyline (*pictured*) viewed from the south bank of the Kanawha River, of which the Elk River is a tributary.

However, the DEP, whose inspectors discovered the leak at 11:10 a.m. in response to residents' complaints about the odor,^[5] contradicted Southern's claim. When the department's inspectors arrived at the facility, they observed the MCHM leaking through a concrete block containment dike with no cleanup or containment measures underway.^{[5][21]} Inspectors found a 4-foot (1.2 m) wide stream of chemical liquid flowing across the floor of the containment dike and into the ground where the dike's wall joined with its floor.^[20] According to DEP inspectors, they discovered a pool of clear liquid measuring approximately 400 square feet (37 m²) in size outside of the damaged white stainless steel tank, Number 396.^[20] DEP inspectors also stated that Freedom Industries' workers had set up one cinder block and a 50 pounds (23 kg) bag of safety absorbent powder to stop the flow of the stream of leaking chemical.^[20]

DEP air quality inspector Mike Kolb described the scene as "a Band-Aid approach" and stated further that it was "apparent that this was not an event that had just happened."^[20] The DEP and the Kanawha County Fire Department had been able to locate the origin of the leak by tracing the smell.^{[17][18]} At the time of the leak's discovery by the inspectors, the damaged storage tank contained about 30,000 US gallons (110,000 litres; 25,000 imperial gallons) of MCHM.^[21]

West Virginia American Water was aware of the chemical spill by noon, but assumed that they could filter it. By 4 p.m., when its carbon filtration system could no longer handle the large amount of contamination in the water and the chemical began flowing through the carbon filter, they decided to report the problem. This they did at 5:09 p.m.^{[8][16]} West Virginia American Water concluded that its tap water was unsafe for use and instructed its customers to cease using its tap water at 5:45 p.m.^{[14][17]} Freedom Industries failed to contact West Virginia American Water following the spill, and West Virginia American Water was instead notified by the DEP.^[8]

Freedom Industries refused initial media inquiries following the spill.^[2] The company's president, Gary Southern gave a ten minute news conference the next evening, January 10.^[2]

Local residents

Residents were advised not to drink, cook with, bathe, or wash with West Virginia American Water tap water; up to 300,000 residents were affected.^{[14][15][22]} The area affected spanned nine counties within the Charleston, West Virginia metropolitan area.^[14] The areas affected included Boone, Clay, Jackson, Kanawha, Lincoln, Logan, Putnam, and Roane counties and in the Culloden area of Cabell.^{[14][22]} The majority of Cabell County was unaffected as its public water system uses water from the Ohio River, and some residents in Saint Albans in Kanawha County, Lincoln County and Hurricane in Putnam county were not affected by the water ban as they were served by local public water systems.^[19]

The West Virginia Department of Health and Human Resources stated that 122 people had sought treatment by January 11 for symptoms including nausea and vomiting.^{[15][23]} Of those 122 people, four people had been admitted to the Charleston Area Medical Center and one at another area hospital for observation with symptoms of nausea.^{[5][15][23]} On January 12, the number of patients treated at hospitals for their symptoms from chemical exposure grew to about 169.^[10] By that evening of January 10, nearly 700 residents had contacted West Virginia's poison control center, reporting a range of symptoms including nausea and rashes.^[18] On January 13, the total number of residents who had been hospitalized had risen to 10, and by January 14, the total reached 14, although none were in serious condition.^{[24][25]}

By 1 p.m. on January 10, the sweet-smelling odor was no longer detectable, according to West Virginia National Guard Adjutant, Major General James Hoyer.^[8] On January 11, the chief of DEP's Homeland Security and Emergency Response division, Mike Dorsey, stated that 7,500 US gallons (28,000 litres; 6,200 imperial gallons) of MCHM had spilled into the river, 2,500 US gallons (9,500 litres; 2,100 imperial gallons) more than had previously been estimated.^{[23][25]}

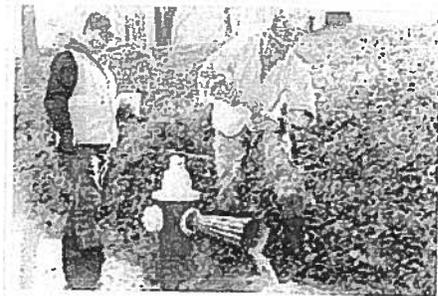
The "do-not-use" advisory on drinking water from the West Virginia American Water system began to be lifted by West Virginia state officials on January 13, five days after it had been put into effect following the January 9 detection of the chemical spill.^{[10][26]} The lifting of the ban started with hospital facilities and extended zone by zone within the West Virginia American Water system.^[26] Following the gradual end to the "do-not-use" advisory, affected Charleston area residents were instructed to flush water from their pipes, hot water tanks, and the icemakers in their refrigerators.^[24] West Virginia American Water began lifting the "do-not-use" ban in downtown Charleston, and would begin phasing in use of the system's drinking water based upon "priority zones."^[10] By the evening of January 13, 15 percent of West Virginia American Water's customers were permitted to begin using the drinking water.^[25]

On January 13, a Kanawha County Circuit Court judge issued a temporary restraining order to preserve evidence at the Freedom Industries' Charleston facility. The order also prohibited the company from modifying in any manner "any structure, tank, equipment, material or condition of" its facility, except as necessary to stop and clean up the chemical spill.^[27]

On January 21, Freedom Industries notified West Virginia Department of Environmental Protection that a second chemical, polyglycol ethers (PPH), was in the leaking tank with the MCHM. The department said that the failure to report accurately the type of materials and the quantities is a violation of state law.^[28]

Government response

On January 9, West Virginia Governor Earl Ray Tomblin declared a state of emergency, and activated the West Virginia National Guard.^[14] Governor Tomblin ordered residents within the spill's affected areas to "continue to refrain from using the water for drinking, cooking, cleaning, bathing and washing."^[14] United States President Barack Obama further declared the chemical spill a Federal state of emergency on January 9.^{[5][14][17]} Following the President's declaration, the Federal Emergency Management Agency (FEMA) was directed to provide both assistance on the ground and federal funding for the state's emergency management efforts.^{[14][17]}



Va. Guard personnel assist W.Va. water collection operations.

FEMA and the West Virginia National Guard distributed bottled water to the nine affected counties.^[14] The West Virginia Bureau of Public Health and the West Virginia National Guard began working on a "long-term" plan to ensure the availability of water and food supplies for residents in the affected areas.^[22] The West Virginia National Guard also provided potable water in tankers.^[5] On January 10, FEMA had sent 75 trucks, each carrying about 4,900 US gallons (19,000 litres; 4,100 imperial gallons) of water.^[17] By the morning of January 11, the United States Department of Homeland Security had sent 16 tractor trailers of bottled water to 16 distribution centers around the Charleston metropolitan area.^[17] At a news conference on January 11, FEMA officials announced that they had already brought approximately 370,000 US gallons (1,400,000 litres; 310,000 imperial gallons) of potable water into affected areas.^[23] The unaffected city water departments in Milton and Hurricane and the Putnam Public Service District in Scott Depot provided their water for free to area residents, and attempted to minimize confusion, as their systems were not affected by the West Virginia American Water system's tap water ban.^[19]

Booth Goodwin, United States Attorney for the United States District Court for the Southern District of West Virginia commenced a formal "investigation into the circumstances surrounding the release."^{[5][14]} Goodwin stated that a "negligent release of this kind could be a criminal violation."^[17] On January 10, Kanawha County Commission President Kent Carper announced plans to request that the U.S. Chemical Safety and Hazard Investigation Board investigate the incident.^[22] CSB officials were in the process of reviewing information about the spill and planned to make a decision to deploy to the Charleston area by January 11.^[22] On January 11, CSB officials announced they were to arrive in Charleston on January 13 to begin their investigation.^[23] The Occupational Safety and Health Administration also opened its own investigation of the incident.^[15]

The Environmental Protection Agency had found no violations and had not taken enforcement actions against the Freedom Industries Charleston facility within the last five years.^{[5][17]} DEP did reveal that the facility had been the subject of a previous "odor complaint" "several years ago," although the complaint was determined by DEP to be unfounded.^[20] Following the spill, the DEP issued a violation notice on January 10 to Freedom Industries for releasing MCHM into the air and violating West Virginia's Air Pollution Control Act and the Water Pollution Control Act, and it subsequently ordered that its Charleston facility's 11 other tanks be emptied and the chemicals moved off site.^{[5][15][17][21]} By the night of January 9, the West Virginia National Guard began testing the contaminated water in the Elk River.^[29] The National Guard utilized its own lab, in addition to labs from DuPont and the West Virginia Department of Health and Human Resources.^[29] The National Guard also requested two additional labs to expedite the water testing process.^[29] West Virginia American Water coordinated with DuPont and the United States Army Corps of Engineers to determine the contamination level within its system.^[17] A total of four labs were set up to continue testing the amount of the chemical remaining in the water.^[23]

On January 12, Governor Tomblin stated that he was coordinating with DEP secretary, Randy Huffman, to draft recommendations for preventing future chemical leaks.^[10] Because MCHM was not considered a "hazardous" chemical, Freedom Industries' Charleston facility was not inspected by the DEP.^[30] Another West Virginia regulation requiring chemical companies to provide "immediate" notice of a spill leaves it to the DEP chief to determine what "immediate" notice is on a case by case basis.^[30] As of January 13, West Virginia state authorities continued their investigation as to which state laws Freedom Industries broke leading up to and following the MCHM spill.^[30]

The tank that leaked showed signs that it may have been damaged by water that froze during unusually cold weather.^[31]

On January 9, 2015, Governor Tomblin released a report detailing the state's response to the Freedom Industries chemical leak.^[32] The report provides chronological detail of each state agency and commission's role in responding to the state of emergency and includes several questionnaires completed by state workers directly involved in the response.^[33]

Threat to human health

The chemical released was "crude MCHM," which was intended for use as a foaming/wash agent to aid in the processing of coal.^[14] Little is known about MCHM's potential effects on human health, nor about its effects on aquatic environments. While its manufacturer, Eastman Chemical Company, is required by law to produce a material safety data sheet (MSDS), much of the information in the data sheet is incomplete, according to a report by the Christian Science Monitor.^[7] Contaminated water smelled sweet, resembling licorice.^[5] According to the American Association of Poison Control Centers, if consumed the chemical may provoke the following symptoms: nausea, vomiting, dizziness, headaches,

diarrhea, reddened/burning skin and/or eyes, itching, and rashes.^{[14][34]} The American Conference of Governmental Industrial Hygienists stated that MCHM caused headaches, eye and skin irritation, and difficulty breathing from prolonged exposures at high concentrations.^[5]

Both health and company officials have stated the chemical consumption is not known to be fatal, even if consumed in its purest form. The chemical leaked was highly diluted due to the large amount of water involved; however, due to the potential health effects, authorities advised over 300,000 residents in surrounding communities to avoid utilizing the water for cooking, drinking, or bathing.^[14] Because shipment of MCHM is not regulated by the United States Department of Transportation, it was not being considered "hazardous" by emergency response and environmental protection officials.^[34] However, under the regulatory standards of the Occupational Safety and Health Administration, MCHM is considered "hazardous."^[34] The chemical's manufacturer, Eastman Chemical Company, identified it as a "skin irritant that could be potentially harmful if ingested."^[7] The Eastman Chemical Company's material safety data sheet for crude MCHM identifies hazards, included skin and eye irritation, and at elevated temperatures, irritation of the eyes and of the respiratory tract.^[35]

The median lethal dose of MCHM is 825 milligrams per kilogram of body mass, when tested in rats.^[34]

Environmental impact and cleanup

The president of West Virginia American Water stated that his company was not aware of a treatment to remove the chemical from its system.^[22] Because of this, West Virginia American Water began flushing miles of lines within its Charleston area water system, although as of January 11, there was no timetable as to when its system would be safe for area residents to use.^{[16][22]} West Virginia American Water's engineers began adding additional carbon and other chemicals to speed the treatment process and move the contaminated water out of its water distribution system.^[16]

Michael Dorsey, Chief of the DEP's Homeland Security and Emergency Response division stated that tests conducted on water samples taken on the night of January 9–10 showed the concentration of MCHM had decreased from 2 parts per million to 1.7 parts per million.^{[8][29]} That finding remained above the 1 part per million recommended by the Centers for Disease Control and Prevention as "acceptable."^{[8][29]} The West Virginia National Guard continued to test the water every hour^{[8][18]} and its teams worked overnight between January 9 and January 10 to perform tests and report results on both inflow and outflow samples of the Elk River's water.^[8] Each test took approximately 46 minutes.^[8] Tests conducted over the weekend of January 11–12 at four locations indicated a safe amount below 1 part per million of the chemical.^[24] Despite this, officials continued testing throughout the water system's distribution area into January 13 before ending the system-wide "no use" advisory.^[24]

The chemical's manufacturer, Eastman Chemical Company, maintains that when MCHM is diluted, the compound does not have adverse effects on the aquatic environment.^[7] No fish kills were reported following the spill and there was no apparent effect on aquatic life, according to West Virginia state officials.^[25] As of 2008, the Elk River serves as the sole remaining habitat for the diamond darter

(*Crystallaria cincotta*).^[36] On July 26, 2013, the United States Fish and Wildlife Service formally designated the diamond darter as an endangered species under the Endangered Species Act of 1973.^[37]
^[38] The potential risk of the chemical spill to the diamond darter has not been reported.

Resulting closures

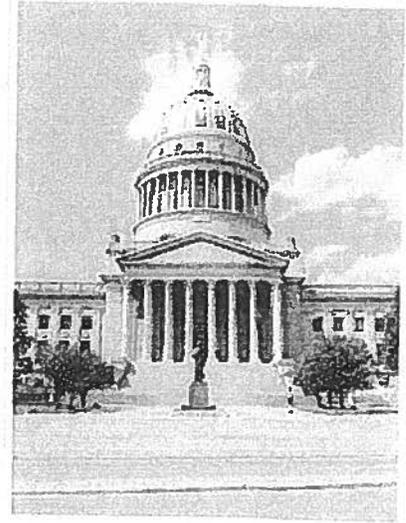
As a result of West Virginia American Water's notice that the tap water was unsafe following the spill, Charleston area businesses closed and hospitals took emergency measures to conserve water.^[17] School systems within the affected eight counties were also closed.^[8] Charleston area residents hurried to nearby stores to stock up on available bottled and packaged water.^[17] The West Virginia Legislature, which had reconvened following its winter break, cancelled its business on January 9.^[14] On January 9, the Supreme Court of Appeals of West Virginia in Charleston and the courts in Boone and Lincoln counties closed.^[17] West Virginia State University in Institute also cancelled its classes for the duration of the tap water outage.^[17]

Because of the lack of potable water, Charleston cancelled a convention of mayors and city council members from around the state of West Virginia, which had been scheduled to begin on January 13.^[14]

Litigation

As of January 10, the day following the chemical spill from Freedom Industries' Charleston facility, at least eight lawsuits had been filed against the chemical company.^[39] The lawsuits were filed on behalf of Charleston area businesses forced to close during the resulting state of emergency and on behalf of all West Virginia American Water customers.^[39] The plaintiffs have asked to be granted class action status and are seeking punitive damages and compensation for lost profits during the state of emergency.^[39] A further lawsuit was filed against Freedom Industries and West Virginia American Water on January 10 by a patient whose kidney transplant was cancelled due to the water outage.^[17]

By January 13, a Kanawha County judge had granted a temporary restraining order against Freedom Industries, and the number of lawsuits filed in the Kanawha County Circuit Court had risen to 19.^{[27][40]} On January 17, 2014, Freedom Industries filed for Chapter 11 bankruptcy, requiring a court-appointed trustee to run the company.^[4]



The West Virginia Legislature and the Supreme Court of Appeals of West Virginia at the West Virginia State Capitol (*pictured*) cancelled sessions on January 9, following the tap water ban.

However, according to the *Charleston Gazette*, a company "whose characteristics are strikingly similar to Freedom Industries." Lexycon LLC, registered as a business with the West Virginia secretary of state about two months after Freedom Industries filed for bankruptcy. The company is registered at the same addresses and phone numbers as the former Freedom Industries, and is founded by a former Freedom executive.^[41]

Previous chemical accidents

Freedom Industries' release of crude MCHM into the Elk River was the third major chemical accident to occur in the Kanawha Valley in five years.^[3] In 2008, an explosion and fire occurred at a Bayer CropScience facility in Institute, killing two employees.^[3] In 2010, toxic gas was released at the DuPont facility in Belle.^[3] Following these incidents, a team of expert officials from the U.S. Chemical Safety and Hazard Investigation Board (CSB) conducted investigations and contacted West Virginia state authorities in 2011 to establish a program to prevent chemical accidents and releases throughout the Kanawha River valley, known as "Chemical Valley" for its history of chemical processing, production, and resulting pollution.^{[3][10]} The CSB recommended that the safety program be headed by Dr. Rahul Gupta, the executive director for the Kanawha-Charleston Health Department.^[3] The West Virginia Legislature and West Virginia state government did not execute the CSB's recommendations.^[3]

Outcome

On January 14, five days after the chemical spill, leaders in both the West Virginia House of Delegates and the West Virginia Senate began investigating the loopholes that allowed the Freedom Industries facility in Charleston not to report the incident earlier.^[42] Senator John Unger, chairman of the Joint Legislative Oversight Committee on State Water Resources, proposed amending the current State Water Resources Management Plan.^[42]

At the request of Governor Tomblin, DEP Secretary Randy Huffman began examining new methods of regulating similar chemical facilities.^[6] DEP is also examining the establishment of an inventory of similar facilities across West Virginia.^[6]

On February 10, the Committee on Transportation and Infrastructure, U.S. House of Representatives, held a field hearing in Charleston to investigate the circumstances behind, and the response to, the chemical spill.^[43]

Further independent sampling

On January 16, an independent unfunded engineering and science research team from the University of South Alabama drove more than 800 miles from Mobile, Alabama to help residents affected by the incident.^[44] The team was headed by Environmental Engineering Professors Dr. Andrew Whelton^[45] and Kevin White, and also included graduate students Keven Kelley, Matt Connell, Jeff Gill, and Lokia

McMillan. The initial focus of their effort was to determine the impact of flushing on chemical levels in household drinking water as well as understand the reaction of the contaminated water with various household plumbing materials.^[46]

When on the ground, the team found that many residents had not flushed their plumbing systems despite being given permission days before their arrival.^[47] Contaminated water remained in homeowner plumbing systems, leaving it to contact plumbing materials such as pipes, valves, gaskets, and joints. Homeowners they spoke with explained that they had refused to flush because of reports they heard from friends that odors caused by flushing could cause negative health impacts. Many homeowners stated no intention of flushing for the foreseeable future. In response, the research team modified the flushing protocol that was issued to homeowners and helped flush residences with these more health protective measures.

Dr. Whelton's team then issued new guidance to the affected homeowners on how to conduct a plumbing system flush.^[48]

On January 20, Dr. Whelton, his team, and the WV Clean Water Hub briefed the Governor Tomblin's Director of Communications about citizens not flushing after a press conference at the Capitol building. The number of residents that had not flushed their plumbing systems was unknown to the Governor's office.

Results of the unfunded research team's efforts have been reported by several news outlets, including *CBS Evening News* with Scott Pelley, local CBS affiliate WOWK, *Charleston Daily Mail*, *West Virginia Water Crisis Blog*, *New York Times*, *Mobile Press-Register*, local NBC Affiliate WMPI, and *The Huffington Post*. Their testing continues and focuses on the public health and plumbing system degradation issues associated with contaminated drinking water.

On December 16, 2014, the research team's completed paper regarding the residential tap water contamination in West Virginia was published in *Environmental Science & Technology*.^[49] It identifies specific chemicals found in residential homes and quantifies the level of contamination experienced by affected residents.

See also

Major chemical spills affecting waterways

- Ajka alumina plant accident
- 2000 Baia Mare cyanide spill
- Doñana disaster
- 2012 Guangxi cadmium spill
- Sandoz chemical spill
- Tianji Coal Chemistry Industry Group chemical spill



Wikimedia Commons has media related to *Elk River chemical spill (2014)*.

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External links

- Freedom Industries web site (<http://www.freedom-industries.com/about.html>)

Retrieved from "http://en.wikipedia.org/w/index.php?title=2014_Elk_River_chemical_spill&oldid=660772709"

Categories: 2014 in the environment | 2014 in West Virginia | 2014 industrial disasters
| Charleston, West Virginia | Chemical safety | Elk River (West Virginia) | Primary alcohols
| Water pollution in the United States | 2014 disasters in the United States | Water in West Virginia

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March 4, 2014

Environmental Quality Board
PO Box 8477
Harrisburg, Pennsylvania 17105-8477

RE: Proposed Amendments to 25 Pa. Code Chapter 78, Subchapter C

Dear Board,

This correspondence is in response to your request for public comments pertaining to the proposed regulations for oil and gas surface activities. Unconventional well development includes gas extraction from the Marcellus and Utica Shale formations. The 2012 Oil & Gas Act significantly revised Pennsylvania's oil and gas laws to address unconventional well development in the commonwealth. The Amendments to 25 Pa Code Chapter 78, Subchapter C have been proposed as a result. As we understand, the purpose of these proposed regulations are to:

- Ensure the protection of public health, safety, and the environment.
- Protect public resources to minimize impacts from oil and gas drilling.
- Modernize the regulatory program to recognize advances in extraction technology.
- Specify the acceptable containment practices to prevent spills and releases.

GSE Environmental, LLC is a leading manufacturer and marketer of geosynthetic lining products and services with a worldwide presence. For over four decades, GSE products have been known throughout the world as the benchmark of quality and reliability. As the pioneer in our industry, GSE is known for leadership, innovation, and dependability. Our industry has an inherent responsibility to help protect the environment and surrounding communities. Our customers depend on us to deliver products that withstand virtually every threat and danger imaginable while providing the best possible performance; we take that responsibility seriously.

Major geosynthetic applications with respect to unconventional well development and operations include:

- Temporary Storage
- Long-term Storage
- Freshwater Storage
- Secondary Containment
- Well Pads

By specifying the appropriate synthetic flexible liner performance in the proposed Amendments to Pa 25 Chapter 25, Subchapter C, synthetic liner system durability can be assured, long-term performance can be predicted, and long-term maintenance can be minimized. GSE respectfully submits the following revisions to the proposed Amendments.

1) Synthetic flexible liner shall be defined as a polyethylene geomembrane manufactured in accordance with the Geosynthetic Institute's *GRI Test Method GM-13 Standard Specification for Test Methods, Test Properties and Testing Frequency for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes* (<http://www.geosynthetic-institute.org/grispecs/gm13.pdf>) and *GRI Test Method GM-17*



Standard Specification for Test Methods, Test Properties, and Testing Frequency for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes (<http://www.geosynthetic-institute.org/grispecs/gm17.pdf>). Polyethylene is, for practical purposes, considered to be impermeable and resistant to a great number and combinations of chemicals.

- 2) Synthetic flexible liner seaming shall be in accordance with the Geosynthetic Institute's *GRI Test Method GM-19 Standard Specification for Seam Strength and Related Properties of Thermally Bonded Polyolefin Geomembranes (<http://www.geosynthetic-institute.org/grispecs/gm19.pdf>).*
- 3) Synthetic flexible liner shall be installed per the design engineer's requirements and recommendations. Additional installation guidance is commonly available from the materials supplier and industry institutions such as the Geosynthetic Institute (Folsom, PA www.geosynthetic-institute.org) and the International Association of Geosynthetic Installers (www.iaqi.org).
- 4) Synthetic flexible liner shall have a minimum thickness of 40 mils.
- 5) Pits designed with a synthetic flexible liner (as defined in this letter) and a leak detection layer are a suitable long-term storage alternative to tanks. In addition to tanks, long-term storage pits shall also be protected from unauthorized acts of third parties.
- 6) Synthetic flexible liner (as defined in this letter) or coated geosynthetic clay liners with a maximum permeability of 5×10^{-11} cm/s are suitable for secondary containment applications.

Additional supporting documentation and technical references are available upon request. Please contact me at (502) 209-0325 if you have any questions after reviewing these comments.

Respectfully Submitted,

Steven Mayes, P.E.
Senior Technical Manager, North America



Steven M. Mayes, P.E.
TECHNICAL MANAGER
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April 29, 2015

Environmental Quality Board
PO Box 8477
Harrisburg PA 17105-8477

RE: Comments to Proposed Regulations 25 PA Code Chapter 78 Subchapter C-
Presented at the Public Hearing held on April 29th 2015 in Washington, Pa.

To EQB Members,

My name is Walter Phillips. Thank you for providing the opportunity for me and others to speak this evening regarding the proposed Chapter 78 regulations.

I am General Partner of Dorso Energy LP, a 2nd generation, family owned and operated conventional oil and gas company founded in 1977 by George O. Scott, my father-in-law. Since George passed away in 2007, I along with my wife Sue and our 7 employees operate over 200 shallow, conventional natural gas wells in 9 SW Pennsylvania counties stretching from the bottom of Clearfield County to the edge of Greene County.

I serve as a board member of the Pennsylvania Grade Crude Oil Coalition (PGGC for short) since 2013. Our company has been a member of PIOGA since its inception. My father-in-law served on the PIOGA Board for many years.

Our company is a typical, small Mom and Pop oil and gas business - just like most of the conventional operators who are locally owned. We live here, our employees live here. We would like to continue to live and work here and continue to be responsible producers of natural gas that serve our local communities, benefit our many landowner families and the other small businesses that support our work efforts.

As most everyone here tonight is aware, the unconventional industry operators (better known as shale drillers) are big players with much bigger staff and much bigger financial resources. Our state and our country are blessed to have this opportunity to develop these natural shale resources that less than a decade ago was only an idea. As the technology for horizontal drilling of the unconventional reservoirs matures, it is logical that newly created regulations would be needed to address the changing methods that continue to improve the shale production process. There is a good opportunity now for the shale industry and the DEP to work together to continue to improve the process with updated regulations for the shale industry to ensure "getting it right".

By contrast, I am more concerned today than any time in the last 37 years in this industry that our small business may not survive if the current changes to the regulations as proposed for conventional operations are adopted. I echo the testimony already provided by very able shallow well operators and their representatives here today. I will not repeat their comments as they were clearly presented and stressed the

dire economic situation for shallow natural gas producers. With the recent rapid drop in oil prices, the shallow oil operators are just now feeling the effects the shallow gas operators, located mainly in the SW PA counties, have been feeling for the last few years.

Our company which historically drilled between 5 and 15 new wells each year since our founding in 1977 utilizing local contractors, local suppliers and materials supplying gas to local markets has no plans to permit or drill a new well this year or next. The last shallow conventional well we drilled was in May 2012 - almost 3 full years ago now. Prior to that, the only year in which we did not drill a new shallow well was 1986 - almost 30 years ago. I believe this current oversupply bubble due to the success of shale drilling may last in the same range of 5 to 10 years. So the low natural gas commodity price will prevent us small operators from drilling new shallow gas wells anytime soon and the significant drop in oil prices will severely reduce new shallow oil well drilling. To add the cost of the proposed Chapter 78 regulations to the conventional operations will be particularly harmful to any new business development of shallow oil and gas.

When Act 13 of 2012 was passed, the DEP began a process that was squarely centered on revising the more complex and evolving unconventional shale operations with very little attention to the small conventional operators. As the process moved along, some administrators contended that separation of the regulations covering the two distinctly different industries was not necessary and may not be possible due to time constraints primarily in the rule making process. As it became clear that these unconventional regulations were destined to flow over onto the unrelated conventional operations, the General Assembly recognized this concept would not work which resulted in the passage of Act 126 of 2014 requiring the DEP to develop a separate set of regulations for conventional operations.

As this bifurcation process has developed, it has become clear that concerned administrators might well have been correct. *There is not enough time to:*

- properly assess the separate need for any new regulations;
- determine the costs related to these new regulations and how it might affect the continued existence of small oil and gas operators;
- evaluate, as per rulemaking procedures for small businesses, whether there are alternative, safe practices that could be substituted for potentially costly new regulations; and
- frankly, to even interpret the complexity of how the regulations are written.

I submit that the rulemaking process has been short-circuited. Historically, the DEP and the shallow conventional industry have a very good record of working together to formulate best practices regulations that have protected the public, our environment and fostered the continued development of Pennsylvania's shallow natural resources. PGCC has spent much time, effort and money over the last 60 days in an attempt to get a working understanding of what is being proposed. As a PGCC board member I can report that PGCC is overwhelmed by the analysis required in some of the proposed regulations - to the degree that we have employed a law firm to assist in the their

interpretation and also help determine if these proposals have merit based in science and are not without hidden agenda. We are not yet in a position to properly comment on these new rules - there is not enough time provided. I ask - Why the rush ?

I compare the current push by the DEP to move the Chapter 78 proposed regulations for the shallow conventional industry to the passage by Congress of the Affordable Care Act - the so called Obamacare became a law that had to be passed - even if few had read it or understood what was in it, how it would be implemented, why it was necessary, what it may cost, and how it may have unintended consequences that could harm hundreds of small businesses, its employees and their families - all that rush even if there were better - less costly alternatives available to achieve the same common goals. Again - Why the rush ?

Without the influx of shale operations in the region since 2005, our shallow conventional operations would continue today to be regulated by Act 223. All aspects of our shallow gas and oil operations can continue to be enforced by those current rules.

It was going to be difficult enough to promulgate these new proposed regulations in the timeline available after bifurcation was required. In light of the change in administration in Harrisburg, the replacement of all new TAB members, the creation of a new conventional advisory board (COGAC) by the DEP, coupled with the replacement of 2 DEP Secretaries, and the uncertainty at this time of what is really required in the new regulations that have appeared since the last comment period - how can rushing this set of regulations for the conventional industry that is already on the ropes to final rule make sense?

I respectfully submit that the DEP must step back from the current process because its foundation and imposed time line is flawed. There is no need to rush adoption of poorly understood regulations that may have unknown or unintended consequences - especially with the reduction in conventional drilling & permitting for the foreseeable future. No one would argue that the best regulations are ones that are clear, concise and easily understood by all so as to ensure proper compliance. I am hopeful that the DEP and the long standing shallow well industry can start anew and work together to promulgate any needed new regulations, but with an appropriate timeline following the proper rulemaking framework.

Thank you for your consideration of these comments.

Very truly yours,

Walter C. Phillips

General Partner, Dorso Energy LP
Board Member - PGCC (Pennsylvania Grade Crude Oil Coalition)
Member PIOGA

Department of Environmental Protection
Rachel Carson State Office Building
Sixteenth Floor
400 Market Street
Harrisburg, PA 17101-2301

Re: Environmental Protection Performance Standards
Oil and Gas Well Sites – 25 Pa. Code Ch. 78
Comments for Public Hearing

Mark L. Cline Sr.
1 Longfellow Ave.
Bradford, Pa. 16701

My name is Mark Cline, and I am President of the Pennsylvania Independent Petroleum Producers Association (PIPP). Since 1985, PIPP has been the voice for small, independent oil and natural gas producers in northwestern Pennsylvania. Our nonprofit association consists of over 350 independent producers, supply companies, industry personnel and supporters who have been responsibly developing Pennsylvania's shallow oil and natural gas reserves for generations. Indeed, despite the tens of thousands of conventional oil and gas wells in operation in our region, a full 72% of the 2126 miles of mapped streams in the Allegheny National Forest have been rated as high value or exceptional value for water quality. Conewango Creek which runs through the heart of the oil industry just got voted the Pennsylvania River of the year.

The vast majority of our members are extremely small, family-run businesses who depend on the modest income derived from the conventional extraction of oil and gas from new and legacy wells to help supplement their incomes and feed their families. Our members live in the most rural parts of Pennsylvania, with little or no access to the Internet. In fact, approximately [REDACTED] of our members do not even own a computer. In many ways, our members have more in common with Pennsylvania's Amish population than they do with large, unconventional well operators whose proliferation across Pennsylvania are the driving force behind the revisions to Chapter 78.

One of the key objectives of the regulatory review process is to ensure that all citizens who will be adversely affected by proposed changes in government regulations have meaningful notice of the proposed changes and a full and fair

our members. Simply stated, 45 days is not sufficient time for me to properly educate my members on the massive changes published for the first time in the Department's draft final rule and solicit meaningful input from them. Time is a precious commodity in short supply for my members, many of whom work seven days a week and live without the modern conveniences of computers and Internet access. Under these conditions, a proper vetting of this draft final rule requires me to contact my members either in person or over the telephone in order to describe all of the proposed changes and solicit their views. That is simply impossible under the compressed time frame dictated by the Department.

Compounding the problem is the Department's disregard of the important role of the Technical Advisory Board (TAB). This is clearly evident from the language of the draft final rule, which reflects a fundamental misunderstanding of conventional oil and gas operations. It is also evident from the Department's treatment of those TAB members brave enough to offer comments to the proposed regulations (if you haven't heard they were fired), the addition of non-statutory members to the new TAB, and the limited opportunity that the new TAB will have to review and comment upon the draft final rule.

The fact that the Department previously held nine public hearings and received over 24,000 comments to the proposed regulation does not cure these deficiencies. The Department has yet to release its written response to the comments it received to the proposed regulation. Equally important, the draft final rule is dramatically different from the proposed regulation. What we are left with is a mere 45 days to submit written comments to the draft final rule and 15 minutes (over the course of three additional hearings) to provide verbal input to the Department. This is a mere fraction of the time that was allotted for written and verbal comments to the proposed regulation published in 2013. If the election of Governor Tom Wolf was supposed to mark a new era of transparency in state government operations, it is not at all evident from the Department's actions with respect to the draft final rule.

In summary, I am certain that there are those high in the Department's ranks who believe that the time for small, conventional oil and gas well operations has come and gone. That the decreased production of Pennsylvania crude oil, depression of oil prices, and the illegal actions of a few, rogue operators warrant the eradication of an industry that dates back to Edwin Drake's first oil well in

Titusville, in 1859. However, that is not a decision for the Department to make. The Department can and should do better to ensure that it is not responsible for the death of an industry that has supported the economy of northwestern Pennsylvania for generations.

**Testimony on PA DEP Regulations
RE: Chapter 78a Regulations for Unconventional Wells
April 29, 2015
Washington and Jefferson College Public Hearing
Washington, PA**

**J. Stephen Cleghorn, PhD
221 East Union Street, Apt 1
Punxsutawney, PA 15767
814-932-6761**

Good evening, Secretary Quigley and all --

I have formal testimony I am submitting on paper, but let me just hit the highlights of those recommendations for purposes of this hearing.

My first point is a process one.

It concerns the fact that many hundreds of people and dozens of organizations have been working statewide to demand tighter regulations than those that are currently proposed by DEP. My testimony includes those recommendations as they were written by others, in addition to my own original comments. I hope that they will not be discounted as a result. I have read that DEP will judge what it believes to be form letters and aggregate the recommendations contained therein as if they were recommended only once.

I hope that is not true. Many of us work on this part-time and as volunteers, so we rely upon our environmental nonprofits to cull through the regulations that DEP makes so very difficult to read in the first place, and then to focus in on the ones we want many voices to support because we have seen the harm done by current practices that too leniently regulated.

If 1,000 of us tell you 1,000 times to ban open waste impoundments, then count that as 1,000 recommendations even if we all say it the same way.

The irony is that DEP - practicing what some have called "egg-slice permitting" - will *disaggregate* the toxic emissions coming from 8 or 10 gas compressor stations that, because of their proximity to one another, are emitting within a small geographic area more dangerous gases like Nitrous Oxide than are generated out of 2-3 large steel mills with smokestacks. Yet DEP refuses to count these as a "single source" of pollution so they can escape EPA toxic emissions oversight.

So if you will do that for the industry, please return to the people in these hearings the courtesy of counting us each as separate people with separate comments.

So, that said, here are MY recommendations (priorities).

Number 1: Close immediately all open air frack pits and impoundments, NOW! Not within three years from when these regulations go into effect. We have been waiting 10 years for this ugly groundwater and air-polluting hazard to end. Why do we have to wait three more years?! Why does the industry get more time? Dr. Michel Boufadel at University of Pennsylvania has shown how leaking impoundments can leave a 200-year legacy of groundwater pollution. News reports have said that DEP does not even know how many such impoundments exist or where they are. Simple rule – CLOSE THEM ALL, NOW, and don't bury them either. If they are still there six months from now, the operator should go to jail.

Standards for frack pits and impoundments (Sections 78.56, 78.57, 78.58, and 78.59). Mounting violations and the potential for water and air pollution have already led some companies to transition away from pits and **standardize the use of closed loop systems** for the storage and treatment of waste. Issues with frack pits have led to contaminated water and resulted in the largest state fines ever against a driller in Pennsylvania, both over \$4 million, to Range Resources and XTO for water contamination due to leaking. DEP should amend the final regulations to:

Prohibit operators from using any open-air pits and tanks, regardless of size or location, for storage and treatment of regulated wastes, including wastewater, drill cuttings, and substances (like gels and cement) that return to the surface after fracking. The new revisions prohibit the use of production pits at shale gas well sites, an important change that should be supported. But the use of huge impoundments to service multiple wells would still be allowed. Waste should be stored and treated only in closed, aboveground systems.

Require all waste impoundments to be properly closed immediately upon the effective date of the regulations. The revisions give operators 3 years to either properly close their existing impoundments or bring them under compliance with the construction requirements in residual waste permits. This is an improvement but still puts nearby residents and the environment at risk.

Require that tanks used for the storage of waste be completely enclosed. The revisions give operators the option of using tanks “without lids” to store waste on well sites—making it more likely that polluting spills and emissions will occur.

Existing pits which contain fracking wastes, including wastewater, drill cuttings, and any other substances that returns to the surface after fracking may not be buried on-site (no “toxic teabags”).

NUMBER 2: Protect the Children. DEP should require, at minimum, a one-mile setback of oil and gas wells, waste storage facilities, and any other infrastructure from the property boundary of any school property.

Definition of public resource (Section 78.15, 78.57, 78a.15, 78.57a)

DEP has added schools to the list of public resources that require additional consideration when permitting oil and gas wells and longer setbacks of waste storage from school

buildings, parks, and playgrounds. This is a positive step, but is not sufficiently protective. While there is no scientifically established "safe setback" beyond which there aren't health risks from oil and gas development, the distances in the regulations (200 feet and 300 yards) are far too little to offer even limited protection.

To improve protection from pollution, noise, and light and safety from traffic, accidents, and explosions, DEP should require, at minimum, a one-mile setback of oil and gas wells, waste storage facilities, and any other infrastructure from the property boundary of any school property. This setback should also be applied to locations where other vulnerable populations reside, including nursing homes, hospitals, day care centers, and communities at a disproportionate risk of health impacts (such as those living in environmental justice areas where existing pollution is already too high and people do not have the means to move away).

NUMBER 3: Not only make drillers responsible for identifying abandoned gas and oil wells before they drill, but plug them up if needed before drilling. This industry has gone along for too many years passing on its messes to be cleaned up at the cost of the public. If they want to drill, tidy up the site beforehand, at their cost. They can afford it better than the public treasury can.

Identify orphaned and abandoned gas and oil wells (Section 78.52a.)

Operators of unconventional wells are required to identify the location of old wells before drilling new ones, **an important change that should be supported.** An estimated 200,000 abandoned wells exist statewide. As drilling spreads and intensifies, so does the chance of accidents, blowouts, and pollution from the intersection of new wells with old ones. DEP should expand these changes and require operators to:

Identify existing wells through onsite inspection before site and well construction and drilling so that the location of a new well can be changed if needed.

Plug and seal or otherwise appropriately address abandoned and orphaned wells according to state safety standards prior to new well site construction. The state lacks funding to address the large number of old wells, so **drillers should be responsible for preventing water and air pollution when accidents occur.**

NUMBER 4: The Huge Waste Issue. This industry has no plan for getting rid of the 1.3 barrels of toxic waste they generate for every foot of each well bore they drill. (Call me if you want documentation on that number.) Some treatment plants not able to handle the waste still receive it because they were "grandfathered in." Well, grandpa is dead, probably from drinking polluted water, and we must have no more flowback water going into our rivers, period. And disposal wells in the middle of communities that depend on well water are no solution, either. If EPA does not ban those, DEP should.

All waste returned to the surface must be monitored, inspected and documented weekly. Treatment and or transport to an approved waste disposal site must be documented with a paper trail.

DEP must prohibit the use of wastewater (brine) from both conventional and unconventional wells as a de-icer or dust suppressant. The practice has not been proven safe and the cumulative effects are unknown.

NUMBER 5: Transparency and access to information. DEP needs to make sure all electronic filings and reports from operators are posted to the public the same day they are completed. And DEP needs to release all data from any studies it does of radioactivity in drilling waste (fluid and solid), water and air tests, and so forth. The raw data needs to be available to outside reviewers with expertise to analyze it.

DEP proposes to require oil and gas operators to file permit applications and required reports electronically. This change would improve data, efficiency, and enforcement and should be supported. That's good

DEP should also make sure that all electronic filings and reports made by operators are also available to the public on DEP's website on the same day they are deemed complete by DEP. Easy and timely access to information by the public is necessary to ensure agency transparency and operator accountability.

LASTLY, a few words about the broader context on these hearings on regulations, because I, like many others here, am uncomfortable being here to suggest improved mitigation strategies that suggest that this highly complex, still experimental, deeply damaging, impossible to regulate, hubris-infused, climate- and public health-destroying industry can be made to operate in a responsible way. Here is how one person once put it, and Secretary Quigley you will recognize these words because they are yours from the days you led the Department of Conservation and Natural Resources. You once said:

"The cumulative impacts of Marcellus development will dwarf all the impacts on Pennsylvania of timbering and oil and coal combined. I am afraid for the future of this state. It is hanging in the balance."

If this is still a true statement in the estimation of the DEP Secretary, and if you do not truly think that all these new and improved regulations will prevent this future and remove the fear stated a few years back, then I would suggest to you that this is a futile effort tonight. I would suggest that we need a ban on this dangerous practice, not improved regulations.

My suggestion? The only safe regulation of this industry is to RULE IT OUT!

Chapter 78 Hearing Comments

Christopher Chadwick
479 Georgetown Road
Lawrence, PA 15055
Washington County

I have been a resident of Washington County for over 10 years, and although I am not native to this area, have seen significant changes in Washington County in my time here.

I came here today to discuss the positive impacts that the oil and gas industry have had on myself, my job and my family. Let's start with the impact this industry has had on my job. Simply put, without the oil and gas industry, I wouldn't have a job. In 2008 I lost my job in the medical device industry when the economy tanked. I was about to be married, had a pile of student loan bills, and no idea what I would do next. I was forced to go back to my college job of waiting tables due to the lack of opportunities available at the time.

After over a year of struggling waiting tables, I found SunnySide Supply, and I began working in the industry. My wife and I often talk about where we would be if the oil and gas industry hadn't landed in Washington County. We have been married 5 years now, have 2 young children and one on the way, and are currently shopping for our first home. We are truly blessed to be lucky enough to be able to live and work in what I believe to be an amazing place for my children to grow up.

So, now I am one of the over 200,000 people in PA that are employed in this industry. I am one of 200,000 people paying taxes and spending money in the area. I am one of the over 200,000 that is still able to proudly call Washington County home. For the record, I mentioned that I am not from PA. This industry has also made it possible for my 3 brothers to also work and raise families in this area. 2 in Washington County, one in Greene County.

So that is how my family and I have been positively impacted by the industry. I would also like to highlight some positive impacts this industry has had on PA and the USA.

- PA is responsible for 25% of the nation's Natural Gas Supply – cutting dependence on foreign oil
- \$830 Million in impact fees plus another \$2.3B in tax revenue

When considering these numbers, it is hard to understand how PA is not getting their "fair share" from the gas companies, as Gov. Wolf claims.

On a national level...

- PA has instituted environmental regs that are now the model for other states across the nation
- Gas prices have seen a drop recently due to the fact that OPEC wants to hurt the US natural gas industry, proof that our natural gas industry has global impacts too

I would like to close by reminding everyone that we are lucky to have the industry here, we are lucky to have these jobs, and we would be crazy to keep adding industry specific taxes and regulations that make it more difficult for these companies to do business here. As of right now, it is less expensive to do business here than in WV. OH just struck down additional taxes and regs on the industry. If we are not careful to keep from getting too greedy, we run a serious risk of losing this industry in PA.



**Environmental Quality Board Proposed Chapter 78 Regulations
Testimony of Eric B. Cowden
Community Outreach Manager for Marcellus Shale Coalition
April 29, 2014**

Good evening. I am Eric Cowden, Community Outreach Manager in western Pennsylvania for the Marcellus Shale Coalition, an association working with regional partners since 2008 and currently comprised of nearly 300 exploration and production, midstream, and service companies committed to developing clean-burning natural gas resources. In 2014, our members were responsible for 96% of the natural gas produced here in Pennsylvania.

Energy development has an incredible history in the Commonwealth. And indeed, natural gas development can serve to enhance and improve our natural resources.

Significant investments have been made across the Commonwealth by our industry to provide needed habitat and restore lands and watersheds. Partnerships with conservation groups are examples of our industry's willingness and commitment to voluntarily protect and preserve our natural resources. And our industry has raised the bar for shale development further with practices designed specifically to lessen the impact on surface disturbance and provide strategies to improve habitat and landscapes.

The benefits do not end there. Take, for example, the fact that the Commonwealth accounted for 25 percent of the nation's natural gas production in recent months, according to the Energy Information Administration. This has led to more revenue. The natural gas industry has paid over \$2.3 billion in taxes since 2008 and \$830 million over three years to communities, counties, and the state in impact taxes. More than 200,000 new hires in Pennsylvania are supported by industries associated with shale development, according to our Labor & Industry. And despite the rhetoric, these are – myself included – lifelong, tax paying residents of this great Commonwealth. In addition, there is a great cost reduction in residential fuel. My grandparents, married 64 years, saw their monthly budget for natural gas heat be reduced by \$150 per month. That is a \$1,800 per year savings to senior citizens on a fixed income.

These benefits, unfortunately, are at risk. Pennsylvania has a complex regulatory environment and an uncertain fiscal climate. These two issues have made doing business in Pennsylvania a real challenge. Pennsylvania already has world class environmental regulations that have been a model for states across the nation. These regulations have been reviewed and praised by the independent STRONGER board. With these powerful regulations – and billions paid in taxes – we need to firm up the uncertainty to do business in this great Commonwealth.

When discussing agriculture issues within the farming community, change is constant, and that statement exemplifies the transformation that has occurred in Pennsylvania Agriculture over the past several years due to the Marcellus shale activity throughout the Commonwealth. All too often the discussion of shale gas and agriculture, center on the farmer who signed a lease or had a pipeline on his/her property and the immediate and future benefits that individual will receive. In many cases, the farmer has used this additional income to expand and grow the agricultural operation, Pennsylvania's #1 industry.

People outside the shale gas play think the story stops here. However, the reach of the natural gas industry has gone much further and touches a variety of agriculture businesses, both large and small all across the Commonwealth. The overall benefits include decreased heating and electricity costs, increased sales of seed and fertilizer, and companies retrofitting agriculture structures such as bins and tanks to accommodate the needs of the shale companies.

The Cowden family was granted property in Washington County, before this nation's first president was elected. Over 200 years later, our family is still a strong steward of the land. In conjunction with our production agriculture we have horizontal drilling and pipeline infrastructure on our farm – all working in harmony. I am proud to be part of Pennsylvania's two most historic industries – agricultural and energy. We must keep up the positive momentum, with guaranteed certainty on sensible regulations.

We are, therefore, very concerned about regulations which seek to hold the natural gas industry to different standards than any other industry; that seek to impose vague and inconsistent standards; which exceed the authority granted to the department by the General Assembly and the courts; and which place Pennsylvania businesses at a competitive disadvantage without a commensurate environmental benefit to our communities or natural resources.

The Marcellus Shale Coalition will provide detailed written comments on the Department's proposed regulations in the weeks to come. Our over-arching message, though, is straightforward: instead of undermining our strong, consistent, and predictable regulatory framework, we should work cooperatively to revise these proposals to maintain a balance between strong environmental protections and a competitive economic climate. **It does not need to be a false choice between the environment and economics**, and we urge the DEP to continue working with our industry and stakeholders across the Commonwealth on a reasonable, competitive path forward. Thank you for the opportunity to provide this testimony.

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TESTIMONY OF STEPHANIE C. WISSMAN

EXECUTIVE DIRECTOR

ASSOCIATED PETROLEUM INDUSTRIES OF PENNSYLVANIA

DEP PUBLIC HEARING ON ADVANCED NOTICE OF FINAL RULEMAKING

CHAPTER 78 AND 78a

APRIL 29, 2015

WASHINGTON AND JEFFERSON COLLEGE

WASHINGTON, PA



**Associated Petroleum
Industries of Pennsylvania**

A Division of API

Good evening. My name is Stephanie Catarino Wissman and I am the Executive Director of the Associated Petroleum Industries of Pennsylvania.

API-PA is a division of the American Petroleum Institute (API), a national trade association that represents all segments of America's technology-driven oil and natural gas industry. Its more than 625 members – including large integrated companies, exploration and production, refining, marketing, pipeline, and marine businesses, and service and supply firms – provide most of the nation's energy and are backed by a growing grassroots movement of over 25 million Americans. The industry also supports 9.8 million U.S. jobs and 8 percent of the U.S. economy, and, since 2000, has invested over \$3 trillion in U.S. capital projects to advance all forms of energy, including alternatives. Many of our members, who own and operate conventional and unconventional wells in Pennsylvania, have a direct interest in this ANFR.

API is also a standard setting organization. For 90 years, API has led the development of petroleum and petrochemical equipment and operating standards. These standards represent the industry's collective wisdom on everything from drill bits to environmental protection and embrace proven, sound, engineering and operating practices and safe, interchangeable equipment and materials for delivery of this important resource to our nation. API maintains more than 650 standards and recommended practices. Many of these are incorporated into state and federal regulations; and increasingly, they are being adopted by the International Organization for Standardization. API encourages and participates in the development of state regulations that provide environmental safeguards and stewardship, and commends DEP on their regulatory oversight program; however we have concerns with several provisions contained in the draft final rulemaking. As such, we will be providing comments on the Advance Notice of Final Rulemaking for 25 PA. Code Chapters 78 and 78a at the three public hearings. Since both Chapter 78 and 78a are very similar, my comments apply to both chapters. Tonight I will address several general issues; specific comments will be presented at the other hearings.

Due to the wide-ranging impact these revisions will have on oil and gas operations it is important for industry to know if these new provisions will apply to existing wells and previously approved water management plans or sources. It is suggested that language be added to clarify the effective date for the new requirements and that wells constructed prior to that date are grandfathered in for purposes of the new requirements.

There are a number of definitions and sections of text that refer the reader to other statutes or regulations. This causes the reader to search elsewhere to find that other statute or regulation and look it up before being able to understand what Chapter 78a requires. This is not user friendly and does not facilitate regulatory understanding and compliance. For example, with regard to definitions, it would be better to provide the intended definition in §78/78a.1 or to

state, "As defined in 25 Pa. Code § XXX.X," rather than refer to a statutory citation that requires more effort to locate. This should be done for the definitions of process or processing, and regulated substance. It should also be done for §78/78a.13, §78/78a.51(d)(2), § 78/78a.60 (a), and numerous other sections where citations to other statutes or regulations are given.

A number of sections are very detailed and prescriptive. It is suggested that these sections be given some flexibility to allow for the use of alternate methods as approved by the Department. These sections include § 78/78a.57a, Centralized tank storage, § 78/78a.59a. Impoundments embankments, § 78/78a.59b. Freshwater impoundments, and § 78/78a.68. Oil and gas gathering lines. There may be additional sections where it would be advantageous to both the Department and the operator to apply the same concept.

The proposed regulation does not recognize landowner rights. For example, in § 78/78a.73(c) and (d) it is presumed that the landowner will grant access to the well operator to monitor orphaned and abandoned wells during stimulation and to plug the orphaned and abandoned well if it is altered by the stimulation. The landowner is not required to grant the operator access, so the operator might not be able to comply through no fault of its own. It is recommended that in these instances, the operator should be allowed to certify the lack of cooperation by the landowner, or upon certification, the operator be relieved of the duty to comply.

There are numerous forms to be developed by DEP for use in implementing the proposed regulatory changes. Numerous of these forms are specified in the regulation and become a regulatory requirement. The forms have not been made available for review and comment, as is required by Sec. 5(a)(5) of the Regulatory Review Act, so these comments should not be considered complete. It is recommended that all such forms be made available for review and comment during the public comment period, and that the comment period be extended until such time as they are made available for review.

This regulation contains many new requirements beyond those contained in the previous version of Chapter 78 that was subjected to a 90-day public comment period and nine public hearings. These new requirements are extensive and, due to the format of old additions, new additions, old deletions and new deletions, difficult to read. It is recommended that, because of the amount of new material addressed and its complexity, a similar amount of opportunity for public participation be provided to the ANFR for Chapter 78a, with its many newly proposed requirements.

Thank you for the opportunity to testify this evening. API-PA and its member companies stand ready to continue to work with DEP on striking a balance between environmental protection and economic development.

Charles Evans Hunnell
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29 April 2015

My name is Charles Evans Hunnell, I reside in Greene County, Center Twp., Waynesburg, 2248 Oak Forest Road. I'm a graduate of West Greene High School and Penn State University. I'm a Vietnam Veteran and a retired LCDR U.S. Navy Reserve. I am also a retired teacher of U.S. History and Economics at Upper St Clair High School.

I testified at the previous hearing on Chapter 78 held at Washington and Jefferson College and today I am even more concerned with the actions of the drilling industry and the DEP concerning the health and safety of the citizens of Pennsylvania.

Why does Pennsylvania continue to permit operators to use open impoundments containing flow back and produced water from UNCONVENTIONAL SLICK WATER DEEP DRILLING? It is well known that these open pits contain hazardous chemicals and radiation (flow back and produced water, part of the byproducts of deep drilling) and that they do leak. The industry has a serious, health and safety problem of how to properly dispose of the byproducts

The DEP has known since 2011 that Emerald Mine, Cumberland Mine (Alpha Resources Mines) and Clyde Mine (a DEP abandoned mine) have been discharging high levels of **Bromides, Strontium, Chlorides, Sodium, extremely high levels of Electronic Conductivity and Total Dissolved Solids, and with elevated Osmotic Pressures** into Greene County streams. The problem is that these levels are not associated with mining but are associated with UNCONVENTIONAL SLICK WATER DEEP DRILLING. How have these **flow back and produced water** contents ended up in Greene County mines? One of the following has had to happen: 1. There has been a massive breach underground all through Greene County. 2. The mines have permitted residual waste trucks to dump their contents into mine disposal sites to be discharged under mine discharge permits. 3. Residual waste trucks have dumped their contents into abandoned mine sites all over Greene County. We know that the second two possibilities have happened. The results of the lack of DEP regulation is that the citizens of Greene County are constantly threatened by the UNCONVENTIONAL SLICK WATER DEEP DRILLING flow back and produced water ultimately making its way into Smith Creek, Ten Mile Creek, Whitely Creek, and into the Monongahela River.

The newest discovery in Greene County, found in tests by the DEP in April of 2014, but buried by the DEP and only discovered by the Harry Enstrom Chapter of the Izaak Walton League of America in November 2014 through a right to know on Clyde Mine and April 2015 right to know on Smith Creek and Whitely Creek is the presence of high levels of **RADIATION**. How interesting that the DEP chose to bury this data and not to send copies in the spring of 2014 to the Harry Enstrom Chapter of the Izaak Walton League of America who requested that radiological tests be conducted at the five hot spots they monitor in Greene County. I believe this shows a disregard for the **HEALTH AND SAFETY** of the citizens of this Commonwealth.

Radiation is one of the byproducts of UNCONVENTIONAL SLICK WATER DEEP DRILLING. We don't hear that in the news do we? The following Greene County streams have been contaminated with RADIATION as well as the chemicals from FLOW BACK AND PRODUCED WATER: Smith Creek, Ten Mile Creek, and Whitely Creek. The results of the radiological testing of Greene County streams indicates the presence of high levels of the following: Radium 226, Radium 228, Uranium 238, Thorium 232. This radiation will be around for a long time in our environment the half-life of Radium 226 is 1,600 years, the half-life of Thorium 232 is billions of years.

THE RESULTS:

RADIUM 226, RADIUM 228 SAFE DRINKING WATER LEVELS: 5 pCi/L (combined 226 and 228)

SMITH CREEK:	DOWN STREAM OF EMERALD MINE DISCHARGE	74 and 4
	001 DISCHARGE OF EMERALD MINE	102 and 8
	UPSTREAM OF 001 DISCHARGE	60 and 3
WHITELY CREEK:	INGRESS TO 014	122 and 10
TEN MILE CREEK:	ABOVE THE CLYDE MINE DISCHARGE	175 and 152
	CLYDE MINE DISCHARGE	301
	BELOW THE CLYDE MINE DISCHARGE	93

URANIUM 238 SAFE DRINKING WATER LEVELS: 30 ug/l

SMITH CREEK:	DOWN STREAM OF EMERALD MINE DISCHARGE	54
	UP STREAM OF 001 DISCHARGE	71
TEN MILE CREEK:	CLYDE MINE DISCHARGE	380

THORIUM 232 SAFE DRINKING WATER LEVELS: 15 pCi/L

SMITH CREEK:	DOWN STREAM OF EMERALD MINE DISCHARGE	4
	001 DISCHARGE OF EMERALD MINE	8
	UPSTREAM OF 001 DISCHARGE	3
WHITELY CREEK:	INGRESS TO 014	10
TEN MILE CREEK:	ABOVE THE CLYDE MINE DISCHARGE	151

Since the readings are this high at mine discharges; I wonder how high they are at the drilling site? Is anyone concerned for the health and safety of the workers, or are they just expendable commodities?

The streams I have identified are used for fishing and usual recreation (swimming and boating). Should the citizens of Greene County not know that the streams in Greene County are no longer the safe

options for enjoyment that they have been in the past but are potential chemical and radiological hazard areas?

As a citizen of Pennsylvania and a resident of Greene County I am incensed at the cavalier attitude of the extraction industry and the DEP for the health and safety of the citizens of this state. With the presence of radiation and carcinogenic chemicals in our drinking water supplies the future does not look good for those of us who make our homes in this region. When people realize that there is a large explosion of cancer in this area in the future; we are already able to see the beginnings of the problems, the citizens will want to know why this is happening. How are you going to answer that question?

We in rural Pennsylvania are being treated like a third world playground for the extraction industries. You have adversely affected the lives of thousands of rural Pennsylvanians by appearing to operate as the proxy of the gas industry and the coal industry.

The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment. We will work as partners with individuals, organizations, governments and businesses to prevent pollution and restore our natural resources.

When in the name of God are you going to do this?

My name is **Thomas R. Moore**. I have a private geological consulting and training firm, **Groundhog Professional Services, LLC** in Waynesburg, Greene County, which is where I grew up and then a few years ago returned, before the Marcellus boom. Previously, I worked for one of the Marcellus operators, but also I have worked with a variety conventional and unconventional reservoirs in my long career, both across North America and internationally.

First, I want to commend and thank all of those who have worked diligently in drafting and vetting the proposed regulations. It is a LOT of work and all too often is a thankless, and in ways painful, process to make extensive and substantive changes to operating rules. I was involved intimately in a similar process in New Mexico a number of years ago, when the extensive development of coalbed methane in the San Juan Basin burst upon them much the same way that the Marcellus did here in Pennsylvania.

Having read through the proposed changes to Chapter 78, I have a three minor points that you may want to consider before all is finalized. I apologize for not having commented earlier in the process, so that these could be considered earlier, but I hope that my lateness does not diminish their possible consideration.

[I will skip this point in my verbal remarks because of limited time for speaking.]
§78.51 (b) and its parallel §78a.51 (b), concerning Protection of Water Supply, of the proposed rule state, in part, that

A landowner, water purveyor or affected person suffering pollution or diminution of a water supply as a result of well site construction, well drilling, altering or operating activities may so notify the Department and request that an investigation be conducted. Notices shall be made to the appropriate Department regional office or by calling the Department's Statewide toll free number....

I would suggest, if I may, that the proposed rule state explicitly that the subject person suffering disruption of their water supply should also, perhaps first, notify, or at least attempt to notify, the holder of the well drilling permit. In practice, this is not always the case. The responsible company may be left initially unaware of the problem they are allegedly causing.

While in my experience, it has been the case that the Department is reasonably prompt in contacting the permit holder when such a case arises, but when someone's water supply is potentially being impacted, time is of the essence. All three parties need to know and communicate fully, as soon as possible, and to convey to one another knowledge of the situation and initiate responses to it.

In regard to §78.51 and §78a.51, under subsections (d) (2) of both, the proposed rule states, in part, that

IF, PRIOR TO POLLUTION, A WATER SUPPLY WAS OF A HIGHER QUALITY THAN REQUIRED UNDER PENNSYLVANIA SAFE DRINKING WATER ACT STANDARDS, THE RESTORED OR REPLACED WATER SUPPLY SHALL MEET THE PRE-POLLUTION QUALITY OF THE WATER.

This proposed change may be a litigation lawyer's dream. One may assume that "Higher Quality" is construed here as meaning to have lower dissolved constituents and higher purity. But to a consumer, "higher quality" is a condition that is "beauty in the eye of the beholder".

As an example, there was classic 1972 paper by the renowned geologist Wayne Pettijohn, entitled "Good Coffee Water Needs Body"¹. In that, he related the story of a particular water well in a small town in North Dakota widely known as yielding the best water for making coffee. People would drive tens of miles to fill jugs from that well for making their coffee. Dr. Pettijohn investigated the well and its history. He found it to be a shallow well, sunk on the prior site of a livery stable. The water indeed had plenty of "body". As in that case, "higher quality" for a user, perhaps with a particular taste, may not be able to be met with a replacement source that is fully adequate and meets Pennsylvania Safe Drinking Water standards.

I believe that the Department is trying to assure water users that they will get back their same "good" water. I think this is unwise in that, from the water user's perspective, such never happens. It has been my experience that even if an alternate water supply of equal, or even better, volume and quality is provided, it will never be "the same as our old water". I have seen that to be the case even if the disruption is temporary and their aquifer source fully recovers to its previous volume and quality.

¹ Pettijohn, W. A., 1972, Good coffee water needs body: *Groundwater* 10(5)47-49, published online 6 JUL 2006, <http://onlinelibrary.wiley.com>, DOI: 10.1111/j.1745-6584.1972.tb03594.x.

[I will skip this point, also, in my verbal remarks because of limited time for speaking.]
Lastly, I quibble over a bit of semantics.

In several places in the proposed rules—some in hold-over wording from the previous rules, as well as in new changes—the terms “horizontal well” or “horizontal well bore” are used. Examples include §78.52a (a), its parallel §78a.52a (a), in §78a.72 (j), and even in regard to the drilling stream and road crossings while laying gathering lines under §78a.68a.

By definition the word “horizontal” means parallel to the horizon, at a right angle to vertical, level, midway between zenith and nadir.

Lateral well bores intentionally depart from vertical, through and out to any angle of deviation, and are only rarely truly horizontal. The Department recognizes that, under §78a.1, in the definition of a “non-vertical unconventional well” as being a well intentionally deviated from vertical to be drilled diagonally or “horizontally”. The phrase “non-vertical conventional well” would be as equally cumbersome.

In all cases, any borehole being drilled intentionally away from vertical could easily be referred to by the more inclusive term “lateral” instead of “horizontal”. I suggest in the new rules that the word “lateral” be substituted for “horizontal” in all cases referring to a bore hole or well drilled intentionally away from vertical.

Thomas R. Moore
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Testimony
Chapter 78 Regulations
April 29, 2015

Bernadette Puzzuole
CEO/President

Pittsburgh Airport Area Chamber of Commerce

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15108

The mission of the Pittsburgh Airport Area Chamber of Commerce is to promote economic vitality through advocacy, education and services to our members and the business community. One has only to look at the traffic entering and leaving the airport corridor to know that there is a high level of economic vitality there, due in great measure to the natural gas activities located there. It is not just the drillers, but the engineers, land men, surveyors, laborers, transporters, office personnel, professional service providers such as accountants and lawyers, the hotel operators and office landlords, the restaurants and the retail establishments, and the landowners of property where drilling occurs, all are benefitting from this industry. The taxing bodies are benefitting as well as they receive a share of the impact fees generated through drilling and a share of the sales and income tax paid by the workers in the industry. Many view the Marcellus Shale industry as the goose that is laying the golden egg in Western Pennsylvania and would challenge anyone who seeks to interfere with that process, including the DEP.

As the Chamber works to serve all of its members, we certainly hope that the economic vitality generated by the expansion of the energy industry in our area continues, but we do not want that economic vitality if it means that the operations are occurring unlawfully or without adequate regulation to protect the residents and other businesses in our communities. Rulemaking to govern the oil and gas industry is certainly proper, necessary and authorized by statute, so long as the regulations provide for consistency in operation, and fairly balance the interests of the public and the drillers. The problem with the proposed Final Rules, however, is that they do not meet those standards in all instances.

Time precludes me from addressing all of the areas where there are problems, so I am going to focus on two.

The first is this hearing and the short comment period provided for the Final Rules. When the initial revisions to Chapter 78 were published by the Environmental Quality Board in December of 2013, the public had 90 days to review and offer comments and over 24,000 comments were received, certainly evidencing great interest in the process by the public. These new proposed Final Rules, however, were only published April 4 and all comments are due by May 19 – half the time for public comment from that when the initial draft was published. If the changes between the initially published regulations and the current final draft were minimal, or merely expanded on the same principles, such a limited time period would be appropriate. These Final Rules, however, contained numerous significant changes, some of which were never even mentioned in the initial proposal. Given the significant changes in the proposed Final Rules, the public should have the same length of time to respond to the changes, if the entire process is not to be viewed as a rush prompted more by politics or other reasons, rather than sound rule making practices.

The second issue I want to address is one of those significant changes. Under the Final Rules, a company making an application for drilling must not only give notice to the public service agencies responsible for

managing the locations of threatened or endangered plant and animal species, but under the proposed Final Rules they must also give notice to the public service agencies responsible for other critical communities in the drilling area. If the audience is wondering what are the other critical communities, they are all plant and animal species not listed as threatened or endangered by a public service agency. So, notice must be given to the agencies responsible for locations where there are threatened and endangered species, and to the agencies that are responsible for locations where there are plant and animal species that are not threatened or endangered. That sounds like all plant and animal species to me. There are some examples given in the Final Rules. Among the inclusions in that group would be plant and animal species classified as "rare", tentatively undetermined, or a candidate, taxa of conservation concerns, and special concern plant populations.

There is no place in the Final Rules, however, that defines these critical communities. The PA Natural Diversity Index, typically referred to in such instances for help, does not use or define the term critical communities. While it does use the term special concern plant populations, it does not define that term, and there is no definition of special concern plant population in any federal or state statute or regulations.

This is quite troublesome. Plant populations appear on the threatened or endangered lists only after a thorough review, public notice and rulemaking, which, we would presume includes scientific support for that designation. That is the same process these Final Rules have undergone.

Because, however, there is no statutory procedure for determining what is a critical community, or what is a plant species of special concern, each public resource agency can define it differently, independently creating its own list, without any requirement that there be public notice and rulemaking, or that there be scientific support for the designation. As a result, there could be inconsistent decisions by different agencies about what constitutes a critical community or special concern plant population, and the lists could change monthly, weekly and even daily since there is no statutory procedure to create the lists.

If Chapter 78 is to be applied consistently and fairly to all drill operators in the application process, there must be consistency in the application requirements. The proposed Final Rules do not provide that consistency and could interfere and prevent future development without due process, and do not fairly balance the interests of the public with the energy community. I urge the Agency to reconsider the proposed Final Rules to be sure they provide due process in all aspects and also to ensure there is adequate time for public comment. Thank you.



April, 26, 2015

DEP Policy Office
400 Market St.
P.O. Bpx 203 Harrisburg, PA 17105-2063
RegComments@pa.gov

TO: DEP Policy Office
FR: Buffalo Creek Watershed Association – Box 408 Claysville, PA 15323
RE: Revisions to the Environmental Protection Performance Standards at Oil and Gas Well Sites (Chapter 78- 78a)

Introduction of the multifaceted activities of the Natural Gas Development Industry in the Commonwealth has generated considerable divisive public and scientific controversy regarding the short and long-term impact of these activities on the health and welfare of both the public and the environment. The Buffalo Creek Watershed Association (BCWA) welcomes the opportunity to review the long-awaited draft of performance standards revisions proposed by the Department of Environmental Protection (DEP) and offers the following comments.

While the BCWA recognizes the importance of energy independence, the Association stands in unyielding support of regulations that consist of high standard requirements, oversight, and enforcement directed toward assuring responsible and uncompromised development practices and regulatory compliance. The BCWA supports the DEP's initiative to modernize the state's oil and gas protection performance standards to reflect emergent technological and scientific advances; but, firmly believes that in order to truly minimize risks and maximize public and environmental protections, additional steps need be taken to strengthen the proposed draft. Those additions include:

- Prohibiting operators from using open pits, regardless of size, for waste water storage/treatment known to be susceptible to damage thus creating pathways to potential soil and water contamination
- Prohibiting the road-spreading of wastewater (brine) as a de-icer and/or dust suppressant
- Mandating drillers check for the presence of orphaned and abandoned wells near drilling pads and paths and plugging or by-passing them to avoid drilling-related collateral damages associated with avoidable displacement of gas
- Requiring timely restoration of potable, clean water to those whose water supplies have been affected by drilling processes
- Implementing noise controls to protect the quality of life of those residing near well pads
- Demanding more public participation in the permitting process for oil and gas surface infrastructures
- Mandating a one-mile minimum safety set-back of pile lines, gas wells, waste storage facilities and any other infrastructure from the property boundary of schools, outside playgrounds, recreational parks and athletic fields as a proactive protection strategy from the potential compromise of large diameter high pressure underground natural gas pipelines; exposure to toxins from vented and fugitive emissions from compressor and processing stations; and, exposure to contaminants occurring from accidental leaks and/or spills

The BCWA supports this DEP initiative and those industries committed to forging a good faith balance between safeguarding the commonwealth's citizenry, wildlife, critical habitat, and natural resources and the development of this crucial energy resource. There is no ethical or moral defense for continuing to employ practices that have been identified as actual or potential threats to the sustainability of Pennsylvania as a healthy state.

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Judith A. Campsey, BCWA Member
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**Public Hearing Testimony
Brad Tupi Public Comments on Chapter 78
Washington, PA
April 29, 2015**

My name is Brad Tupi. I live in Upper St. Clair, Allegheny County. I have two comments on DEP's proposed new regulations. First, that the Marcellus Shale industry has been an overwhelming positive for our region. Second, that burdensome regulations should not be imposed without a careful evaluation of costs versus benefits.

I.

There is plenty of data about the positive economic impact that Marcellus Shale has had on Southwest Pennsylvania: the jobs created, the impact taxes paid, and the growth in our energy supply. I will focus on my personal observations of the benefits of this industry.

As I mentioned, I live in Allegheny County, which does not have much Marcellus activity. Nevertheless, the benefits of the industry can be seen every day. In Upper St. Clair, new residential units have been built for gas industry workers who want to send their children to Upper St. Clair schools.

I live near the commercial corridor of Route 19 in Peters Township. Stores and restaurants on Route 19 are busier than ever before, reflecting activity driven by the Marcellus Play.

Racetrack Road in the Meadowlands is booming with construction. There are now several hotels there; such hotels would not be necessary if not for the Marcellus activity nearby.

Southpointe in Canonsburg is home to dozens of shiny new buildings, many of which house energy companies like Consol and Range Resources. I gave a presentation several years ago at an energy conference in San Antonio, Texas. Everyone knew about Southpointe and Canonsburg as the center of the country's energy boom.

I work at the Tucker Arensberg law firm in Downtown Pittsburgh. Our firm has grown from 75 attorneys to 90 purely as a result of Marcellus Shale. We have about 15 lawyers who do oil & gas title work full time. This growth is a direct result of the Marcellus play. In my line of work, litigation, I am personally involved in handling 20 cases directly tied to Marcellus Shale development. I assume the growth at other Pittsburgh firms has been similar. If law firms have experienced this kind of growth from the Marcellus, then so have other service businesses, like accountants, engineers and consultants. And for every professional deriving work from the Marcellus, there are clerks, secretaries and other employees.

Ten years ago we complained that economic conditions in the Pittsburgh area did not allow our young people to stay here. They had to leave home to find opportunity. But that is no longer the case. Pittsburgh is now a trendy place for young people, with neighborhoods like Lawrenceville and the South Side becoming more and more fashionable. The energy industry has created economic opportunity, not only for the hardhat guys at drill sites, but also for the young professionals Downtown.

For the first time since the decline of the steel industry, Pittsburgh seems to be on a growth trajectory. Let's not kill this growth with needless regulations.

II.

That brings me to my second point: DEP should not impose new regulations on the Marcellus business without a careful evaluation of costs and benefits.

Pennsylvania already regulates the oil & gas industry. Oil & gas operators already have to meet permit requirements, face inspections of their work, and pay fines for non-compliance. Pennsylvania's existing regulations are a model for oil & gas regulations in other states. So why is DEP now proposing new regulations?

I looked over the new regulations. They are so lengthy and complicated as to defy reading. Which means energy companies will have to hire lawyers and consultants to interpret the regulations, rather than hiring workers to drill wells and develop clean energy for our nation.

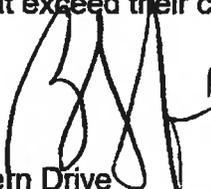
This expense might be justified if the industry posed some serious threat to health or the environment. But experience tells us this is not true. Pennsylvanians have been drilling oil and gas wells for over 150 years. The industry has been fracking for 60 years. Fanatical claims about fracking have been shown time and again to be false, based on hysteria rather than fact.

Regulatory burdens cost money. That is why Pennsylvania law requires that the Department conduct a cost-benefit analysis of the new regulations. My understanding is that the Department has not done so. Nor has the Department evaluated the impact of the new regulations on small businesses, as required by law. The Department's failure to perform legally-required evaluations leads one to believe that the regulations could not withstand scrutiny.

Another ground for suspicion is that the Department has inserted new regulations into its final draft rulemaking. Making changes late in the game limits the opportunity of the regulated businesses to study and comment upon the new provisions. It also prevents oversight bodies from submitting comments and objections. If the Department believes the new regulations are justified, why would the Department try to short-cut the rulemaking process?

Conclusion

For the first time in many years, Southwestern Pennsylvania is enjoying a measure of economic prosperity, thanks to the Marcellus Shale industry. The industry has shown that it can develop an important natural resource in an environmentally-friendly way. DEP should not impose costly new regulations (especially now, when gas prices are down) without first assuring us that the regulations would have measurable benefits that exceed their costs. Thank you.



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Note: These comments are my own and are not intended to reflect the views of my firm or its clients.

Testimony
PA Department of Environmental Protection
Oil and Gas Regulations 78 and 78A
Presented by Chelsea Holmes
Women for a Healthy Environment
April 29, 2015 Public Hearing
Washington, PA

Good evening and thank you for this opportunity to present. I am Chelsea Holmes, program coordinator for Women for a Healthy Environment, a nonprofit organization headquartered in Pittsburgh, PA. Women for a Healthy Environment educates and empowers community members about environmental risks that impact human health. We provide educational programming, through tools, information and online resources that address creating healthy communities across the region. Further, the organization advocates for policy solutions that better protect human health and the environment.

I am here this evening to address children's health. One of our main program areas is Healthy Schools, which focuses on creating a green and healthy learning environment for all those in the school setting. Our organization recently created an online mapping tool. We wanted to get a better understanding of the potential environmental risks in school communities. To that end, using Pennsylvania Department of Environmental Protection data, we mapped all conventional and unconventional active gas wells within a one-mile radius of a school setting. Our analysis concluded the following.

- There are 350 unconventional wells in the Southwestern PA region situated within one mile radius of a school building.
- There are 75 schools that have one or more wells within a one mile radius of the school building
- There are 30 school districts that have one or more wells situated within a one mile radius of one or more of their school buildings

Children are especially vulnerable populations that need our protection. Pound for pound, children **breathe more air, drink more water, and consume more food** than adults. Several scientific studies continue to assess and report on the health impacts from drilling operations. An article in the March 26, 2015 Environmental Science and Technology publication indicated that polycyclic aromatic hydrocarbons (PAHs) were highest when passive air samples were closest to active wells. Those living closest to gas wells had an estimated risk "for maximum residential exposure of 2.9 in 10000, which is above the US EPA's acceptable risk level. Overall, risk estimates decreased 30% when comparing results from samplers closest to active wells to those farthest. (The results) suggest that natural gas extraction may be contributing significantly to PAHs in the air, at levels relevant to human health."

A 2012 Columbia University study in Environmental Health Perspectives found that exposure to higher levels of PAH was associated with a 24% higher score of anxiety or depression for children ages six to seven than those with low exposure levels. Infants found to have elevated PAH levels in their umbilical cord blood were 46% more likely to eventually score highly on the anxiety/depression scale than those with low PAH levels in cord blood.

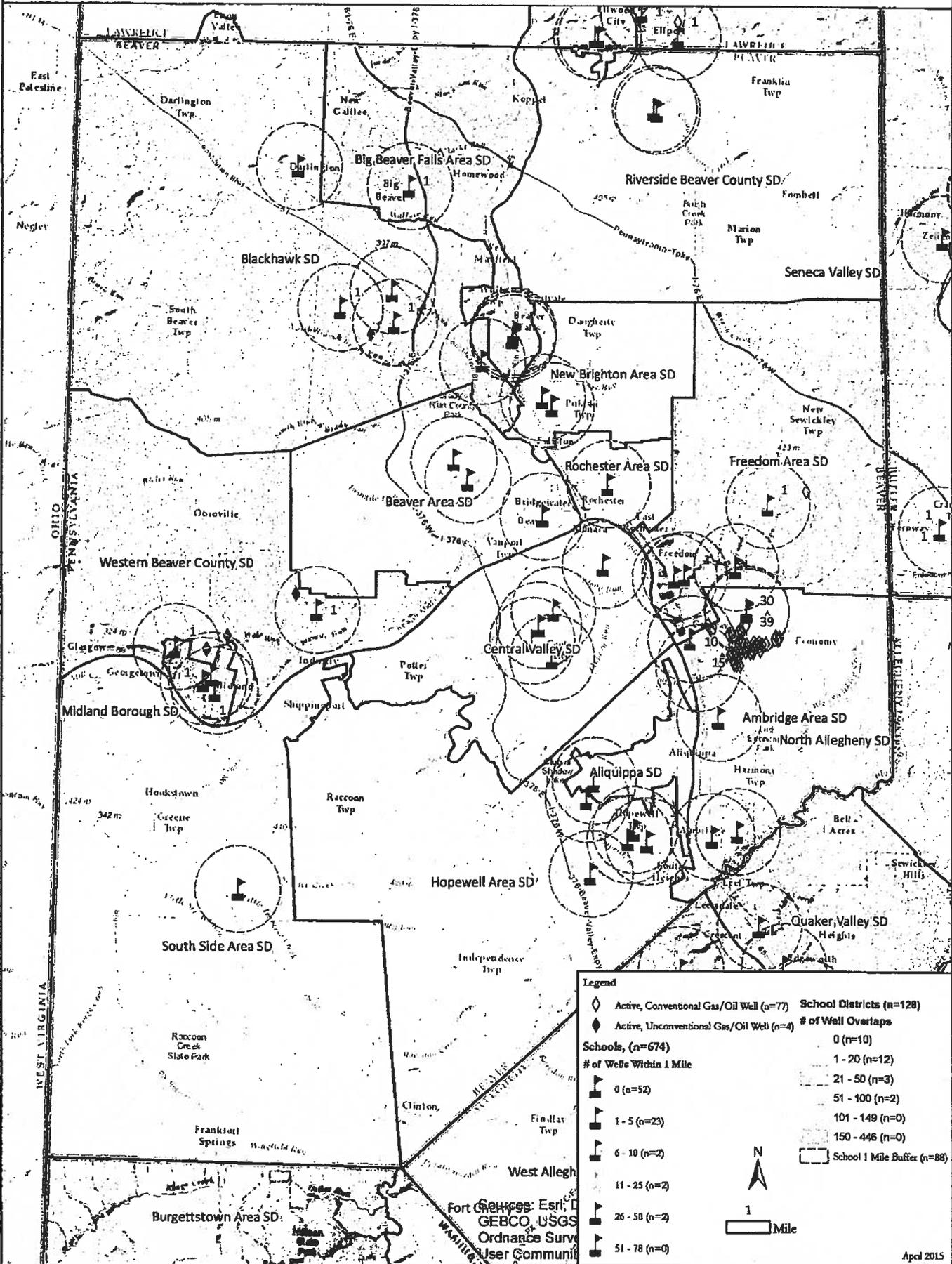
Another study done in 2014 study by the Department of Environmental and Occupational Health, Colorado School of Public Health found that "babies born to mothers living in areas with the highest density of wells [in Colorado] – more than 125 wells per mile – were more than twice as likely to have neural tube defects than those living with no wells within a 10-mile radius. Children in those areas also had a 38 percent greater risk of congenital heart defects than those with no wells." Neural tube defects, such as spina bifida, are permanent deformities of the spinal cord or brain. They usually occur during the first month of pregnancy, before a woman knows she is pregnant. Congenital heart defects are problems in how the heart's valves, walls, veins or arteries developed in the womb; they can disrupt normal blood flow through the heart.

There are many human health exposure periods throughout the drilling process. Chemicals used in the drilling operation include known carcinogens (benzene, formaldehyde, 1,3-butadiene). High HAP and VOC emissions (especially near completion sites) can impact health, including links to heart and lung disease. Particle pollution from the drilling operation leads to increased rates in asthma, heart attacks, strokes, various cancers and COPD. Diesel exhaust and industrial emissions, gasoline vapors, and chemical solvents as well as natural sources emit NOx and VOC that help form ozone, which is a lung irritant and aggravates those with asthma.

As stated in the 2012 Pennsylvania Asthma Burden Report, asthma rates in school children have increased by percent from years. From the 1997/98 to the 2008/09 school year, the prevalence of asthma steadily increased every year (although 2004/05 school year data is not included). By the 2008/09 school year, lifetime asthma prevalence had increased almost 70 percent compared to 1997/98. In 1997/98 approximately 137,000 Pennsylvania school students in kindergarten through grade 12 were diagnosed with asthma; by 2008/09 that number had increased to more than 220,000.

Just today the American Lung Association released its State of the Air Report. The region landed as the 9th worst in the country for year-round measures on fine particle pollution (or soot), and the 10th worst for short-term particle pollution (the number of days with unhealthy particle levels when air quality is especially dangerous). Pittsburgh metro also ranked 21st worst in the nation for smog from ground level ozone.

Because there are many potential health risks associated with drilling operations, Women for a Healthy Environment is requesting that in this advanced rulemaking under Chapter 78 Conventional Gas Wells and Chapter 78a Unconventional Gas Wells, that DEP include measures that are most protective of children's health, including requiring all conventional and unconventional gas drilling and associated infrastructure be located outside of a one mile radius of any school building or playground. Should any incident or accident occur at a drilling site, this one mile radius would be more protective of the populations in that vicinity, certainly more protective than 200 feet or 300 yards as indicated in the current regulations. Requiring these stricter measures will guard our most vulnerable population, our children, by reducing their exposure to potential health risks. Thank you for your time and consideration.

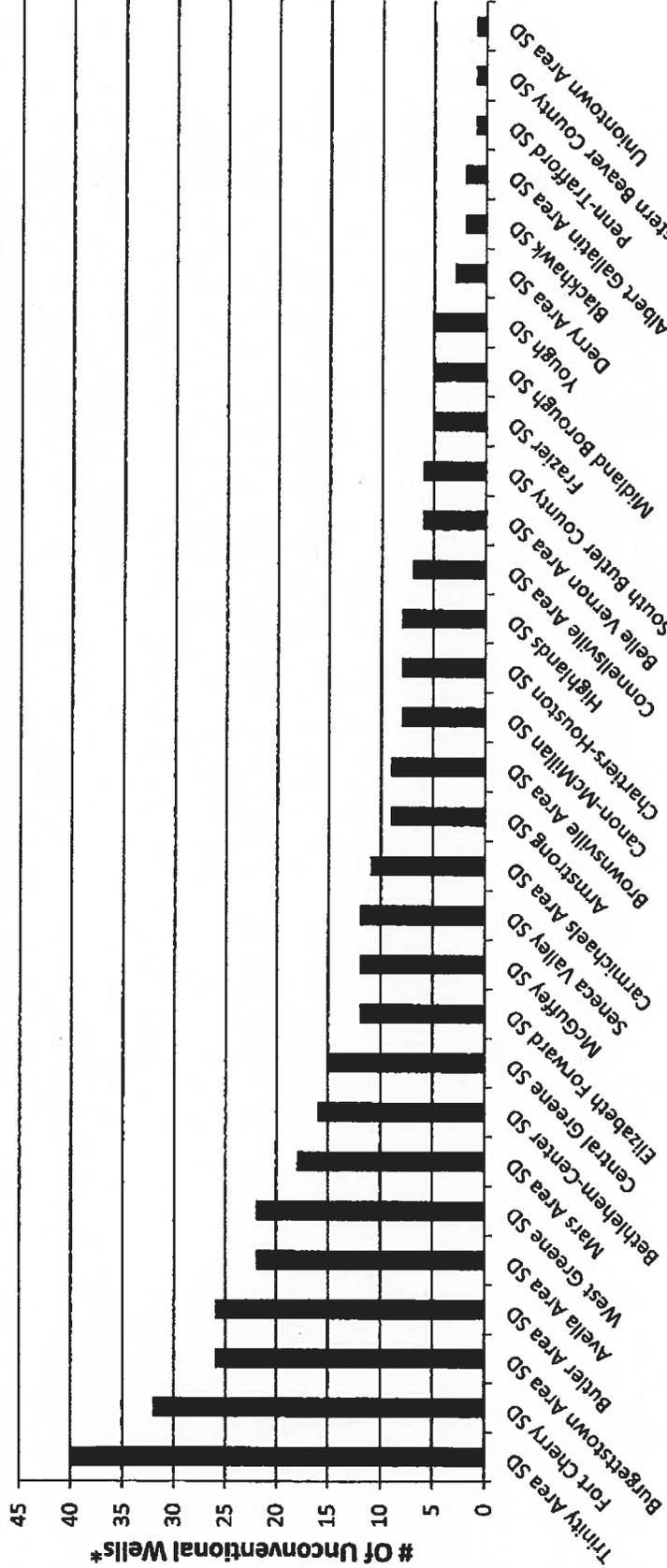




www.HealthySchoolsPA.org



School Districts with Unconventional Wells Within One Mile of a School



*Within one mile of school radius

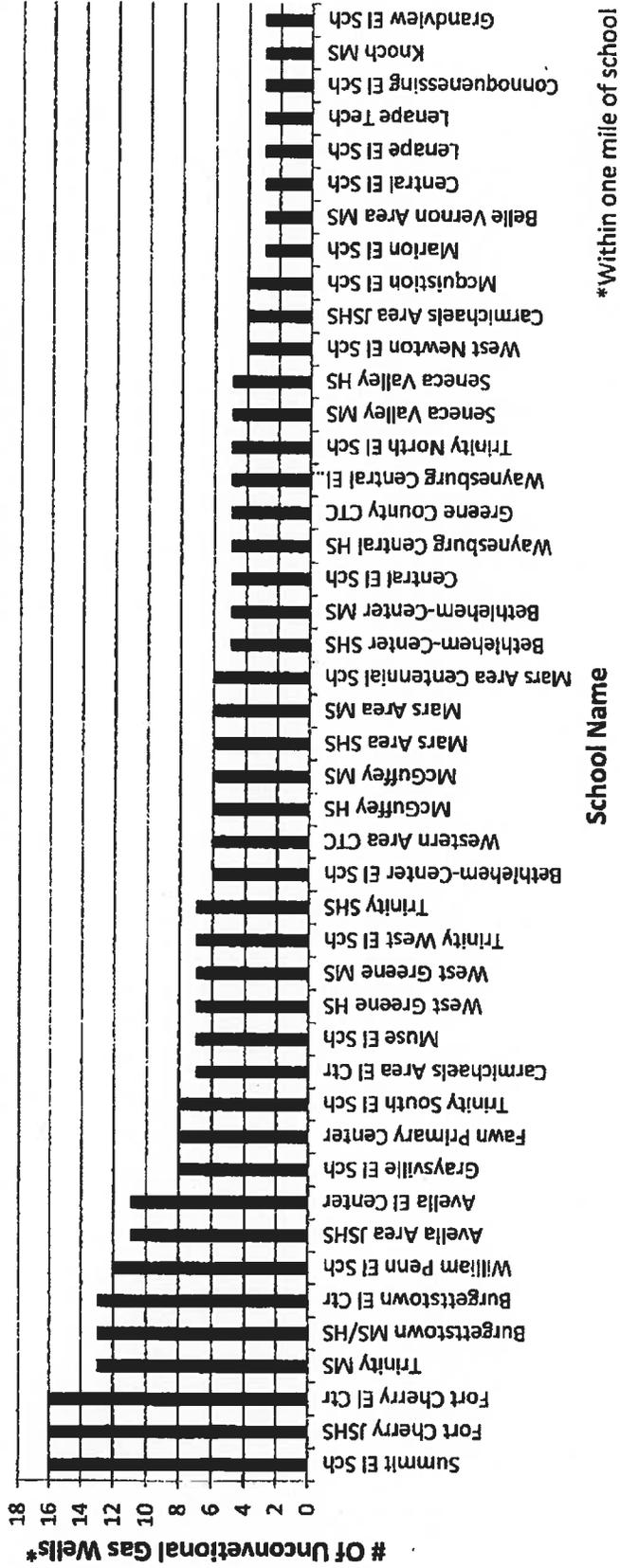
School District



www.HealthySchoolsPA.org



Unconventional Wells Within One Mile of a School



*Within one mile of school

My name is Walter Schnelbach. I am a Field Representative for Laborers' Local Union 1058 and I live in Slovan, PA.

I could stand up here and throw statistics at you. I could tell you that Shale development is supporting, and has made more secure, over 200,000 jobs in Pennsylvania. I could tell you that Pennsylvania produces 25% of the U.S. natural gas supply which has lessened our dependency on foreign energy sources. I could tell you that natural gas is one of the cleanest burning of all fossil fuels.

But instead, I would like to tell you of my own personal experience. I have lived in Slovan, Washington County, for over 20 years. I moved out this way because of the beauty and the small town mentality. When I would drive around, I would see farms with older farm equipment and only enough livestock to feed their family. I saw vacant homes that people couldn't afford to rent due to lack of industry. I saw stores and gas stations that only stocked basic necessities due to the lack of customers. I saw restaurants whose children weren't sure if they wanted to run the family business or move somewhere else where they could afford to raise their families. To me it was your average small town.

Then, a little over 5 years ago I met with some representatives of a company named Mark West. They explained to me that we were living on large gas deposits called the Marcellas Shale that could be safely extracted from the ground and piped to needy customers. That peaked my interest because I am in the construction industry and there was potential to put some members of my local union to work. I had no idea what was to follow.

For the past 5 years the gas industry has employed tens of thousands of Laborers, locally and country-wide. In this area I have seen farms that have benefited with new farm equipment and now raising enough livestock for profit. I have seen convenience and hardware stores and gas stations with full shelves with anything you need, and family restaurants that will be family owned for more generations. Now try to find a home or apartment to rent or buy. When I drive around, I see gas right of ways pristine with green grass. I have family friends and neighbors who now have good jobs to help support their families. I see a community that I want to live in more than ever and a whole lot of it is due to the gas industry. To me, Washington County is still as beautiful as it was over 20 years ago.

**Testimony against Fracking Industry
To DEP representatives
29 April 2015
Washington and Jefferson University
By. J. Michael Atherton, Ph.D.**

I stand opposed to the entire fracking system. This system includes but is not limited to the following: land cleared of all vegetation, the daily drone of thousands of trucks, drilling pads that emit noise and light pollution, fracking that uses toxic materials at weaponized pressure levels, thousands of miles of intrusive pipelines, leaking compressor stations and condensate tanks every 10 miles, the one-way use of millions of gallons of fresh water (a resource much of the world would fight to defend), and the injection of toxic waste into the ground causing unprecedented numbers of earthquakes in Oklahoma and Ohio. Peer-reviewed research documents everything I have said. The only so-called research that questions these findings is sponsored by the fracking industry and, as such, cannot be trusted.

Let me offer an analogy. A company is hired to build walls to protect a crowded population on one side from a lava flow on the other. It is proven that 10% of the walls will fail in the first year, quickly killing thousands of people. It is further proven that 50% of the walls will fail in 30 years wiping out tens of thousands of people who trusted the wall-builders. With regard to fracking, 10% of the wells will fail in the first year and 50% in the following 30 years. If we compare these useless walls to the proven failure rates of fracked wells we see the only difference is that death by lava is quicker than death by pollution.

To continue my wall analogy let me say that regulations established to protect the citizen from deep-pocked Frackers resemble a picket fence built to stop the tide. It cannot work. Frackers have hirelings whose sole task is to evade our protective fence. In service to their masters they provide a constant tidal-like pressure against the well being of citizens.

I suggest whenever a fracker argues against protections with the line, "...it is just too expensive to..." Stop them and say the following: "too expensive to protect the lives of American citizens." Then ask when it is too expensive to protect Americans? What profits for these multinational companies justify contaminating our air and water? We built the greatest military in the world to protect us from invasion. What about the invasion of private industry into our back yards and across fences from our schools? What about the intrusion of money from multinational companies into our local politics? What about the incursion of fracking waste into our drinking water? If North Korea had sent terrorists to do these vary things to our country we would attack North Korea in a second, but if the invaders wear business suits and carry hollow promises of personal profits we open the door and invite them in.

On the issue of jobs let me say not all jobs were created equal. No one should earn a living by making it impossible for others to breathe, drink clean water, or live free of radiation. If a person loses a job because it pollutes, then it was a bad job. Such is the job of Frackers. Their jobs worsen our lives. They get a wage and we get bad air and water, plus any risks anywhere in the fracking system lowers the value of our property. They get the wage and we get the risk. This is the very definition of a BAD JOB. It has been proven that we can do better on all scales through the job intensive renewable sector.

The difference between an accountant for a South American drug lord and an accountant for a hardware store is that the drug accountant enables an evil institution. A drug accountant is just as guilty of building the drug cartel as the thugs who break kneecaps. So too a Fracking accountant is as guilty of pollution as any drilling rig roustabout. Accountants just stay a little cleaner and can look the other way to pretend there is no pollution.

Not all jobs are created equal. Some help the community and others tear it apart. The DEP is responsible to hold people liable for the consequences of their jobs in order to protect all citizens all the time.

Gas-based energy independence is another Fracking myth. Realize private fracking companies own the gas and will sell it to the highest bidder. This is the reason they have built LNG processing plants. They will liquefy the gas to compact it and then sell it to China. This does not make our nation energy independent. It only makes a few multinational companies richer.

Some think fracking will bring our troops home. Nonsense! Multinational fracking companies owe allegiance to shareholders, not the American citizen. Supporting Fracking does not make you a patriot. If you support fracking it means you want a few rich companies to get richer, that's all. If you are an owner its in your self-interest to sing the glories of fracking. But if you are not an owner why support fracking because it endangers your health and lowers your property values? Fracking now and in the future has nothing to do with war in the Middle East. They are two separate issues. We do not drive with fracked gas, so pump prices follow oil markets that have nothing to do with fracked gas. So to all those who want to wrap yourselves in the American flag because you support a private company, please wrap yourselves in something else, perhaps the fracking company's corporate logo.

Maybe we should follow New York who protected their citizens using American pragmatism to ban fracking. It is in their best interest to ban any industry that sickens and kills its citizens, that ruins its roads, that makes fresh water toxic, and that fills the air with constant noise and deadly pollution. New Yorkers are no better than us. If New Yorkers thought they could make a buck through fracking, they would jump on board... as long as costs were acceptable. But here's the trouble: the costs are intolerable. They know, as we should know, that health costs will skyrocket, while property values plummet. The cancer of the fracking system will infect us long after the shale has played out and the frackers have invaded yet another area to ruin in the name of their corporate masters.

My name is Melissa Hodge and I live in Jefferson Hills, PA. I am here today testifying both personally and professionally on behalf of a small business in Robinson, Allegheny Medical Integrated Health Services. I am here today to address my personal concerns, as well as our company's fear over the significant changes proposed by the Department of Environmental Protection to Chapter 78. The proposed regulations would single out the oil and gas industry with standards not imposed on other industries. This standards will significantly increase costs by hundreds of millions of dollars; while providing little if any environmental benefits. The DEP has failed to conduct a cost-benefit analysis for the proposed changes to this rule, nor has it conducted an analysis on the impact to small business, like the one I represent today. These changes will negatively impact my family and I, as my co-workers and their families who rely on our small business.

We all know that shale gas development has created well over 200,000 Pennsylvania jobs. Pennsylvania residents and businesses are experiencing reductions in energy prices of more than 40% since 2008. It has contributed to improved air quality in Pennsylvania and has provided \$830 million in impact fees that have been distributed to our local communities and environmental programs, as well as \$2.3 billion in additional tax revenue to the state.

My father was a steel worker, and I worked in the auto industry as a manager for General Motors in a plant here in West Mifflin, PA. I have witnessed the fall of both industries, and my family has paid the price because of both. As a single mother. I own my home, pay taxes, and am an active member of the community in which I live and work. Since I lost my job at GM with the fall of the industry, it has been more than a little difficult to replace that income. Two years ago, I was offered and accepted a position of Director of Corporate Health for our small locally owned and operated medical clinic. Due to the growth of the midstream companies, construction companies, environmental companies, etc. we as a small business have grown 47% in two years. All of those businesses need drug and alcohol testing, pre and post employment physicals, annual medical surveillance to ensure a healthy workforce. So as a small medical provider, we have grown. We have gone from 24 employees to 33 since December 2013. These jobs are doctors, medical assistance, x-ray technicians, and directors positions – family sustaining jobs. However, with the implementation of these regulations, 70% of our customer base will be negatively impacted causing loss of employment and cut backs in service, therefore drastically impacting our small business and potentially causing the same loss of jobs and forced layoffs for our employees.

That is our business story.. and here is my personal story ... two years ago, I was close to losing my home, behind on my property taxes, struggling week to week to make ends meet. I didn't know if or how I was going to make it. My savings was close to running out, and there really didn't seem like there was much hope. Family sustaining jobs .. they just were nowhere to be found. Then luck would have it, I was offered a position where there was potential and growth opportunities because of the gas and oil industry in our area. Two years later, my income is finally at a family sustaining level again. I am no longer worried about making it paycheck to paycheck. I can provide for my children. I am saving money again and able to put money away towards my retirement. Finally, I am living again. What you are proposing to do may just take money from me, my family, and our future.

Pennsylvania already has world class environmental regulations that have been a model for states across the nation. These regulations have been reviewed and praised by the independent State Review of Oil and Natural Gas Environmental Regulations. This rule making will result in significant compliance

costs at a time of historic downward commodity pressures, making Pennsylvania less competitive with other shale basins while providing little if any environmental benefits. These regulations will create job loss, business loss, for me, the customers we serve, as well as within our own business.

Thank you.

MELISSA HODGE
168 Gill Hall Rd.
Jefferson Hills, PA 15025

Allegheny Medical Integrated Health Sves.
2000 Cliffmine Rd., Park West Two, Suite 110
Pittsburgh, PA 15275

Michael D. Graham

7880 Steubenville Pike
Oakdale, PA 15071
412-994-0540 ph.
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April 29, 2015

PA Dept. of Environmental Protection
400 Market Street, PO Box 2063
Harrisburg, PA 17105-2063
Attention: DEP Policy Office

RE: Chapter 78 and 78a
Draft final version – Regulations

Dear Sir:

I am Michael Graham, residing at 7880 Steubenville Pike, Oakdale, PA 15071. The few conventional oil and gas wells I own and operate are located in Armstrong, Butler, Washington, and Allegheny counties. Most of the wells were drilled before 1900. These wells have provided and continue to provide an income to owners, operators, employees, and associated businesses. Domestic gas is provided to many homeowners in accordance with the terms of the original leases and assignments.

My testimony as an independent operator of conventional oil and gas wells is to again express my opposition to the proposed draft final rule of the subject regulations.

On Jan. 23, 2014 I provided testimony regarding the proposed regulations and I have attached those comments to my written comments which I have submitted. Those comments still apply since it is evident that all of the industry comments and concerns did not receive consideration in the draft final rule. Rather the draft final rule has expanded significantly and will place additional burdens on the oil and gas operators.

The draft final rule also refers to forms which are not yet available for review and thus far our experience with the Department's development of forms which are manageable has been costly and burdensome without evidence of benefit or usefulness.

I believe these regulations exceed the intent of the bifurcation of the regulations law, are burdensome and overly prescriptive without justification for the protection of the environment, and have not addressed the cost of compliance to those of us being regulated and therefore should be withdrawn.

Of particular concern is:

Section 78.51 – Protection of water supplies.

If an operator causes a change to the water quality of a private water supply the water must be replaced with like quality water or to the standards established under the PA Safe Drinking Water Act, whichever is better. My objection is that the replaced water must meet municipal drinking water standards even if the water did not meet those standards prior to drilling. There is lots of room for misuse of this provision, particularly in Pennsylvania where there are no domestic water well construction standards.

Section 78.15 Application requirements:

In addition to requiring setbacks from public resources (parks, state forests, game lands, wildlife areas scenic rivers, national landmarks, critical communities, historic or archeological sites, school properties, well head protection zones, the operator is required to describe the functions and use of the public resource). My objection is that the operator is to speculate on the functions and use and that this is a transfer of the permitting review process from the Department to the operator.

Other critical communities:

This expands the requirement from identifying and protecting threatened and endangered species to identifying and protecting "other critical communities." Other critical communities have not gone through the public listing or review process and includes many items that one governmental agency or another has decided internally are worthy of protection. Again, there is lots of room for misuse of this unrealistic expansion of the intent of protecting threatened and endangered species.

Forms:

There are a dozen or more forms referenced in the proposed regulations that have not yet been drafted or disseminated by the Department. The industry is expected to accept these forms as satisfactory in the final regulations without a chance to review or discuss.

Section 78.66 Reporting and Remediating Spills and Releases:

This section requires that the operator that experiences a spill or release enter the Act 2 Land Recycling Program for remediation. My objection here is that the Department is taking a voluntary program created to encourage the reuse of blighted lands and making it mandatory for oil and gas operators. In addition, this section imposes time lines for specific actions that do not exist in the Act 2 program. In my opinion it is gross misuse of the program.

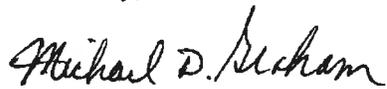
Further, this section establishes unrealistic reportable quantities for brine release. Any release of 5 gallons or more must be reported to the Department. This volume is more stringent than most listed hazardous wastes.

Further, a threshold value of 42 gallons is proposed to require enter the Act 2 program. This is considered overly burdensome and will lead to excessive costs and time without a corresponding environmental benefit.

Advanced Notices:

The proposed regulations also have numerous requirements for advanced notifications to the Department for certain field activities. Each and every one of those requirements opens the operator to violations and fines that are not of a nature to cause any environmental harm, but are simply administrative in nature.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Graham". The signature is written in black ink and is positioned above the printed name.

Michael D. Graham

Michael D. Graham

7880 Steubenville Pike

Oakdale, PA 15071

412-994-0540 *ph.*

724-693-9236 *fax*

January 23, 2014

Environmental Quality Board
Rachel Carson State Office Bldg.
16th Floor
P.O. Box 8477
Harrisburg, PA 17105-8477

RE: Oil and Gas Regulations
Chapter 78, Sub Part C
Published in the PA Bulletin Dec. 14, 2013

Dear Board Members:

I am Michael Graham, residing at 7880 Steubenville Pike, Oakdale, PA 15071. The *few* conventional oil and gas wells I own and operate are located in Armstrong, Butler, Allegheny, and Washington counties. Some of the wells I own and operate were drilled before 1900. These wells have provided a valuable economic resources to owners, operators, employees, and associated business for a substantial period of time. Some of these wells still provide free gas to homeowners in accordance with the original leases.

My testimony this evening as an independent producer of conventional oil and gas wells is to express my opposition to the passage of these regulations as published in the Pennsylvania Bulletin.

Shallow oil and gas wells (conventional wells) have operated in this state for over 150 years and regulations governing those wells have been more than adequate to protect the environment while allowing producers to operate profitably through most of those years.

Be assured that the legacy wells that produce small amounts of oil and/or gas will not withstand the cost of these additional regulations.

Regarding shallow conventional oil and gas
Issues such as:

1. References to Act 2 procedures for clean-up of spills at oil and gas well sites will impose excessive and unnecessary costs to the oil and gas operators and are not justified by a clear environmental benefit.

2. The obligation to return land to "approximate original condition" that existed prior to well site construction disregards the ability of operators and land owners to agree on site restoration.
3. The requirement for PPC plans creates an unnecessary burden for small operators. Plans would be similar for each well site yet frequent updating would be required for the plans to be meaningful.
4. The pit requirement for a slope no steeper than 2 horizontal to 1 vertical for conventional wells which are small (contain less than 100 BBL of fluid) and are used for a short period of time (1-2 days) results in substantial larger areas of disturbance and greater costs without benefit.
5. The requirement for conventional operators to retain soil scientists for certification of pit bottoms relative to the seasonable ground water table adds a significant cost for operators. A performance standard would be appropriate.
6. The reporting and remediating of releases is respected to protect the environment, however modifications are required to eliminate unnecessary costs to the operator. The quantity of releases and various alternatives for remediation need to be considered.
7. The obligations related to "special concern species) result in a process which could be never ending, costly, and possibly without authority or benefit.
8. The protection of tanks from unauthorized acts of third parties is nearly impossible when that unauthorized party decides to vandalize equipment and tanks. Measures that fit the circumstances (tank sizes, location, secondary containment, signing, and locks where appropriate) need applied at the operator's discretion rather than mandated by regulation. Given the number of tanks, manways, plumbing, and valves that have been installed during the existence of the industry a regulation cannot address all the variables without resulting in the need to replace tanks, and tank containment facilities in many instances. Modifying tanks by drilling or welding to secure locking devices would require expensive cleaning, use of inert gases to prevent explosion at substantial cost.
9. Under ground or partially buried tanks that store brine have to be identified and an exemption is required to be requested to preclude the required removal within 3 years is a significant concern given the reason that most buried or partially buried tanks exist. These tanks have been sited in this matter to accept gravity flow from production tanks, provide resistance to freezing and for surface right of ways. Removal of these tanks results in many additional costs including tank removal (and likely replacement from damage during removal) new tanks, secondary containment construction, larger use of the surface and concerns over how to prevent the production water from freezing.
10. The electronic notifications, submittals, and reporting creates a burden for small producers which do not have access for such transactions. Hard copy submittals need to be permitted and over time most producers at their own discretion can choose to submit information electronically.

The small independent producers have been subject to an avalanche of changing regulations over the past several years such as pending revision to Chapter 78 in 2010, passing of Act 13, impact fees, raising bonding amounts, raising permitting fees,

expansion of permit application requirements for ESCGP 1 and 2 and road construction, no land disturbance until a permit is issued, mechanical integrity assessment, spill policies and now Chapter 78 regulations for Oil and Gas wells Sub Part C.

The ability to drill new conventional wells will be reduced due to increased costs resulting from these regulations. Existing wells will be less profitable to operate and abandoned early. The result will be a loss in crude supply to the refineries which currently operate at less than capacity. Jobs will be eliminated and affiliated business, free gas consumers, and royalty owners will be impacted.

The conventional wells need separate regulations that are considerate of a 150 year old industry with a wide spectrum of well construction techniques, a limited margin of profit yet a significant economic benefit to the Commonwealth.

We operators have operated these legacy wells in a respectful manner considering the environment. This environment is our work place and where we live our lives.

I urge you to vote NO to these proposed regulations and allow conventional wells to operate under the effective regulations in place before the passage of Act 13 of 2012.

Sincerely,



Michael D. Graham



ENGINEERS - PLANNERS - SURVEYORS

11 Grandview Circle, Suite 116

Canonsburg, PA 15317

Pj 724-746-0730

April 29, 2015

Pennsylvania Department of Environmental Protection
Policy Office
400 Market Street, PO Box 2063
Harrisburg, PA 17105-2063

Re: 25 PA Code Chapter 78, Subchapter C

Founded in 1992, Dawood Engineering is headquartered in Pennsylvania serving clients nationally with offices located in West Virginia, Ohio, Massachusetts, and Texas. Our company provides consulting services for a wide range of industries including municipal governments, educational institutions, hospitals, landfills, privately held companies and large public corporations. In the oil and gas market, we provide engineering, permitting and field services including facilities design, survey and routing, wetland delineation, geotechnical investigations, and hydrostatic testing.

The exploration and development of the Marcellus Shale in Pennsylvania brought to our firm a tremendous opportunity at a time when we, like many engineering firms, were feeling the negative economic impacts of the Great Recession. Dawood's leadership quickly recognized that the oil and gas industry would need the design skills and regulatory knowledge of our professionals who worked in the land development and transportation industries for years. The transition required rigorous training to attain the strict health, safety, and environmental standards demanded by our oil and gas clients.

The energy industry has brought growth to Dawood and recognition as a top 500 firm by the Engineering News Record in 2013 and 2014. We now have eight office locations and employ nearly 200 employees. As a successful minority-owned firm, we are proud of our diverse workforce of engineers, surveyors, and scientists who assist in the safe, responsible, and compliant development of our natural resources. As a business, we recognize the importance of the oil and gas industry to our economy and believe it helped to position Dawood to withdraw voluntarily from the Disadvantaged Business Enterprise program run by the Commonwealth in October 2014.

As noted, our engineers, scientists, and technicians are knowledgeable and trained in Pennsylvania's regulatory environment and we appreciate the Pennsylvania Department of Environmental Protection's ("PADEP") efforts to protect our natural resources. Pennsylvania has been recognized as having some of the nation's strongest regulations on oil & gas development and we support that. According to STRONGER (the State Review of Oil & Natural Gas Environmental Regulations) the current regulations are "well managed and meeting its program objectives".

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However, we are concerned that the Commonwealth is shifting its focus from upholding these high standards to creating a regulatory environment that is punitive and borders on government overreach. We fear that the new proposed requirements, while meant to protect, will instead provide minimal protection of our valued resources at significant costs. This will ultimately cost jobs, harm our company financially and devastate the economy of Pennsylvania.

Dawood offers the following comments pertaining to the proposed rulemaking on 25 PA Code, Chapter 78, Subchapter C:

1. As per Executive Order 1996-1 and Section 5.2 of the Regulatory Review Act, the PADEP is required to complete a full Regulatory Analysis of any new regulation that includes a cost/benefit analysis and submit such to the Environmental Quality Board (EQB) and the Independent Regulatory Review Commission (IRRC). The PADEP has not completed such action for all elements contained in the proposed revisions to Chapter 78, specifically, as it relates to the noise mitigation proposal and the centralized tank storage provision.
2. §78a.41 Noise Mitigation. The inclusion of new standards pertaining to noise mitigation far exceeds the authority and capacity of PADEP to regulate and enforce. This section is vague and approaches noise from a qualitative perspective that is subjective in nature for assessment and enforcement. Inclusion of this new requirement poses potential conflicts with municipal zoning ordinances that have noise emission standards. This language appears to usurp authority from those who are best equipped to respond to local concerns of such matters. Finally, the PADEP does not have the expertise or equipment needed to enforce matters pertaining to the science of acoustics.
3. §78a.1 Definitions. PADEP is creating conflict with existing standards and regulations in the newest version of the proposed rulemaking. Inconsistent definitions, coupled with new language, will create tremendous regulatory uncertainty and have negative consequences that will drown the oil and gas industry with unnecessary mitigation measures. Three areas of concern are:
 - a. The definition of Floodplain is inconsistent with Chapter 105 and creates confusion with the FEMA definition of floodway, *which is the FEMA mapped floodway or 50 feet from top of bank of a stream (regardless of stream class)*. This language should not differ from the FEMA definition as an ephemeral stream is a subset of an intermittent stream and there may be confusion that ephemeral streams do not need to be considered for permitting, when in fact they must.
 - b. The inclusion of "common areas" of schools or playgrounds will overwhelm the PADEP with the effort to identify such locations. Adding such criteria unfairly burdens the oil and gas industry and companies such as ours because of the sheer number of "common areas" that potentially could be identified and corresponding mitigation measures that could be proposed. The use of this language lacks the transparency of the resources listed in Act 13, which include state and national resources. Such is notable because of the precise listing procedures for inclusion of these resources and/or documented geographic boundaries, in the case of parks, forests, and game lands.

- c. The new definition of "critical communities" sets an unrealistic standard with which the oil and gas industry would have to comply. At the best-case scenario, the definition does not provide for consistency with conceivably compatible definitions or databases. However, most disturbing is the overwhelming number of new categories of resources that would be protected without the required public process or corresponding science and fact finding that is mandated by Pennsylvania law.
4. As authorized by Act 13, the EQB is required to develop criteria upon which permit conditions would be based and which would protect the rights of mineral owners while allowing for optimal development of oil and gas resources. Upon review of the proposed revisions, such criteria is missing. The failure to offer a procedural construct for the regulations will exacerbate regulatory uncertainty for the oil and gas industry.
5. As per Section 5.1 of the Regulatory Review Act, the PADEP is required to provide a comment and response document along with the final form regulation to IRRC upon completion of its review of comments. Dawood submitted written comments and verbal testimony on January 13, 2014, to PADEP and our ability to comment upon the additional changes is weakened without the Comment and Response Document. We request such be made available and provide our initial comments again for reference below:

Section 78.51(2) Quality- *the quality of a restored or replaced water supply will be deemed adequate if it meets the standards established under the Pennsylvania Safe Drinking Water Act (35 P.S. Sections 721.1-721.17) or is comparable to the quality of the water supply before it was affected by the operator if that water supply exceeded those standards.* Dawood agrees that if an operator impacts water quality, the operator is responsible for restoring or replacing the water supply. However, the operator should only be responsible for restoring or replacing an impacted water supply to the quality of the water supply before it was affected by the operator.

Section 78.52a – Abandoned and orphaned well identification, *proposes that the operator identify the location of orphaned or abandoned wells within 1000 feet measured from the surface above the entire length of a horizontal well bore.* Identifying abandoned and orphan wells is acceptable, however, this requirement must not be open ended. In its current form this regulation is unclear as to what requirements will be placed on industry and has the potential for undue and unnecessary added expense.

Section 78.15(g) *requires the operator to protect public resources,* but the regulations do not provide the criteria for protecting the public resources. Dawood suggests that the proposed regulations be revised to clarify words such as *corridor (Section 78.15(f)1(ii)), discrete areas (Section 78.15(f)4),* etc. As with other regulatory programs (e.g., RCRA), the regulations should provide language that allows the operators to rely on generator knowledge for disposal purposes in lieu of continued chemical analysis of materials generated on site.



In closing, Dawood urges the PADEP and EQB to reconsider the proposed regulations. Modifying and revising the Oil & Gas regulations at this time without providing scientifically sound and clear language, or following the required procedural process, would be detrimental to the EQB, PADEP, industry and the citizens of the Commonwealth.

Sincerely,

Dawood Engineering, Inc.

Joy M. Ruff, AICP
Director of Planning and Community Relations

Bony R. Dawood, PE
President

Corporate Office: Enola, PA
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