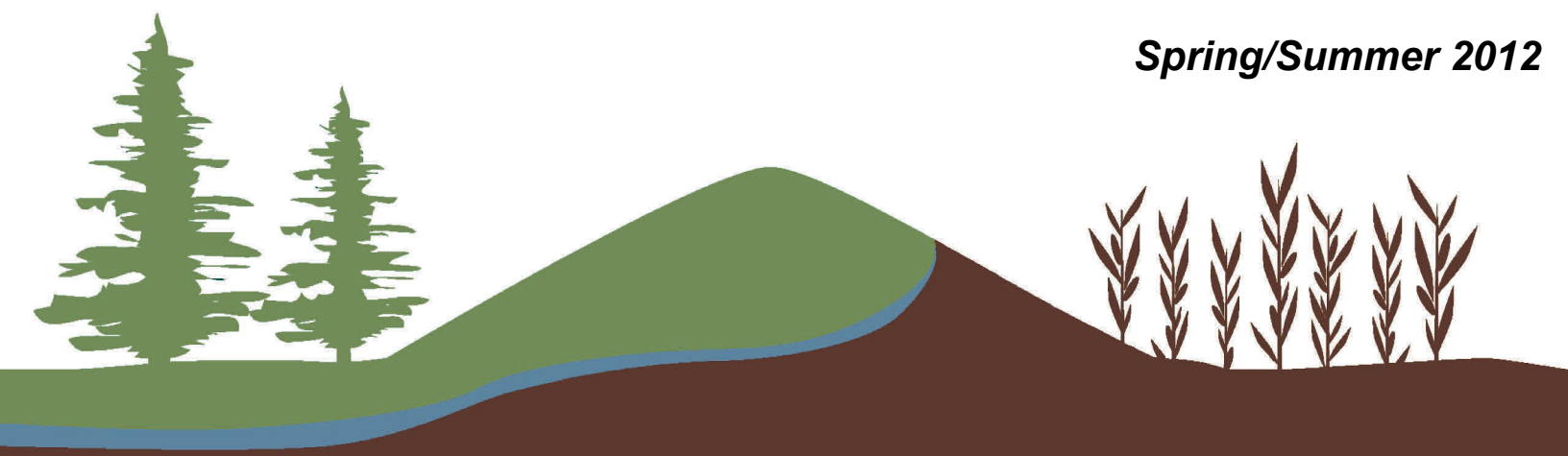


*Spring/Summer 2012*



# The Environmental Assessment

*The Official Newsletter of the Pennsylvania Association of Environmental Professionals*



# The Environmental Assessment

Spring/Summer 2012

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# Message from the President

Eric Buncher|*Allegheny Airport, PAEP President*

I am honored to address members and friends in this, my first president's message. Although I have been a member of the Pennsylvania Association of Environmental Professionals (PAEP) for 15 years, I have had the opportunity to meet only a small percentage of our members. With every new acquaintance, I develop a better understanding of the potential of our great organization and how unique and fortunate we are to have these members and supporters from across the state.

As some of you know, my goal is to improve PAEP based on input from PAEP members, sections, committees, and Directors. To date, the heart and soul of this input has focused on programs and benefits to improve the careers of Pennsylvania's Environmental Professionals. Towards this end, one of the first acts of the 2012 PAEP Board of Directors was to increase by 10 fold the budgeted amounts allocated to sections for local programming.

Section Chairs are as follows:

Western Section: Keri Cimarolli  
Central Section: John Thomas Graupensperger  
Eastern Section: Mitchell Burack, Joseph Musil  
Pollution Prevention/Energy Efficiency Roundtable:  
Tim Tuttle, Mike Parrent

Call your section chairs. Join their program committees. Help them spend their money. I salute them for their passion in putting together local events for members.

As your 17<sup>th</sup> president since PAEP's inception in 1985, I intend to utilize committees to improve the organization. I will be counting on you for assistance on these committees in the near future. Join these committees to give back to your profession and leave a legacy of improvement for environmental professionals across the state.

We have made great progress. Duane Peters chairs our Government and Legislative Committee. Angela Schreffler chairs our Student and Scholarship Committee. Crystal Quintin chairs our Newsletter Committee. Linda Zug chairs our Member-

ship Committee. All of these committee chairs are seeking members to actively support their missions. I am extremely fortunate to work with these people.

Many of our new programs are making great strides. From efforts of the Government and Legislative Committee, PAEP will have multiple representatives on the State Transportation Innovation Council. From efforts of the Student and Scholarship Committee, PAEP will be giving free, first year memberships to seniors graduating in environmental majors from Pennsylvania colleges and universities. From efforts of the Membership Committee, PAEP has begun a buy one; get one membership initiative to bring in new members.

Additional committees will be established to cover important missions including employment, fundraising and continuing education credits. I challenge you to helm or help on any one of these committees and move PAEP to a future bright with success.

It is critical that we do a better job of publicizing our efforts to improve the professional lives of our members. By spreading the word of our accomplishments, we will be better positioned to increase membership. The greater our membership, the greater our resources and influence. Generating new members can only be done with your support. PAEP has a responsibility, unlike any other organization in Pennsylvania. Integrity, honesty and fairness must drive every action we take. Your support in helping PAEP meet its responsibilities is critical. I welcome your ideas and assistance. I look forward to working with each of you.

Sincerely,

Eric H. Buncher, President  
Pennsylvania Association of Environmental Professionals

A special thanks to the following sponsors for their contributions and continued support of PAEP, where the promotion of environmental planning, assessment, review, management, research, and education are vital.

PAEP strives to provide the public with an understanding of the environmental professional while providing its membership with opportunities to interact through networking, educational seminars, its newsletter, its annual conference, meetings, and other sponsored events.

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## 2012 PAEP Annual Student Contest Winning Submission

Dean Scott|Ursinus College Class of 2014

### About Dean Scott

Dean grew up in southern Maine and is currently a sophomore Biology & Environmental Studies student at Ursinus College in Collegeville, PA. At Ursinus, Dean is the Program Coordinator of the Outdoor Rec. & Environmental Activism House and is



Dean Scott, left and Brook Gabel, 2012 Conference Chair, right

the treasurer of the Ursinus College Environmental Action club. Additionally, Dean works in the Biology Prep-room, tutors in organic chemistry and is a tour guide for the College. Dean was recently awarded the Faculty Prize for an outstanding sophomore in Biology at Ursinus. Dean will be studying abroad in Panama in the Fall of 2012. In Panama, Dean's research will focus on the social value of local food systems. A copy of Dean's winning article is provided for PAEP's readership below and on the following pages.

### White-tailed Deer Overabundance & Land Management Implications in South Eastern Pennsylvania

#### Problem Identification

The "balance of nature" is a common maxim in the realm of ecological science and environmental studies. Although there is debate over whether or not such a phenomenon actually exists, especially in this age of climate change, the sentiment behind the idea is this: all the organisms in the natural world contribute some amount of influence to the ecosystem they inhabit. Even if that amount of influence does not appear large, the theory is that all organisms are kept in check by various mechanisms provided within natural environments. If an organism is consuming its own food matter at too great a rate, food availability decreases, and a population decline of that species follows suit. The balance is restored. The existence of such a balance appears to be maintained by various mechanisms within an ecosys-

tem. For example, when the waste products of one species are the nutritional needs of another, or when one species consumes a resource while another replenishes it. The occurrence of such mechanisms seems to suggest the maintenance of an ecological balance. Despite the appeal of such a uniform stabilizing mechanism, there are noticeable discrepancies when such a theory is applied to perhaps all real-world situations.

One such outstanding example seems to be occurring in the Mid-Atlantic state of Pennsylvania (PA) in reference to the species *Odocoileus virginianus*, the white-tailed deer. There has been an increasing concern of the overabundance of deer populations in the United States since the 1940's and 1950's (Côté 2004). This mounting concern has been a response to the evident problems that large populations of White-Tailed Deer have the ability to cause. Among these problems are damage to many agricultural crops, total alteration of the ecosystems deer inhabit (Côté 2004), increased collisions between motor vehicles and deer (Levey 2006), and increased transmittance of disease (Alverson 1988). The linkage of overabundant deer populations to these problems implies a need for an understanding not only the biological effects overabundant deer populations have on a natural environment, but also an understanding of the management challenges increased numbers of this species pose. It has become apparent that the White-Tailed Deer population in South-Eastern Pennsylvania is not conforming to the balance of nature.

#### Goal Clarification

The ultimate goal concerning deer overabundance is a reduction in the white-tailed deer population. In order for this goal to be realistically met, however, there are certain issues of importance that must be addressed before action is considered. Of particular importance is the need to have a firm understanding of not only what actual biological effects an overabundant deer population may have but also an understanding of what management challenges these effects impose.

The need for having accurate and well documented scientific evidence concerning the biological effects of an overabundant deer population should not be underestimated. A collection of strong data and a genuine search for information are among the most immediate necessities when analyzing any given problem (Wallace and Clark 1999). Due to the lengthy history of this problem in PA there has already existed the opportunity for

much scientific data collection in past years. The wide breadth of environmental effects deer have has been documented through many scientific efforts and the wealth of information available on this problem has become as equally encompassing as the problem itself. A focus on the ecological effects of deer has led to great insights on the effects deer have on understory vegetation specifically (Alverson, 1998, Augustine 1998, Levey 2006), and the effects they have on the entire vegetation dynamics of an ecosystem as a whole (Côté 2004, Eschtruth 2008, Horsley 2003). Having such an extensive base of information on the problem at hand will prove to be a most valuable resource when approaching how best to address deer overabundance.

Although the prerequisite of establishing a strong base of information has been met, there remains an equally important variable in the solution of this problem that has yet to be as successfully addressed. Herein lays the second issue that must be explored if a successful decline in the deer population is to be implemented. This second subject is concept of effective deer population management. Entwined within this subject how to adequately manage the deer population are the ideas of ethical and social issues and how they apply to population dynamics (Green 2000). The goal of deer population reduction cannot be reached by data collection alone and a substantial effort must be applied to the exploration and application of population management techniques.

### **Historical Trend Description**

One of the greatest benefits derived from the extensive data collection that has occurred is the formation of an expansive and well documented history of the problem of deer overabundance. The influence deer have on natural habitats has been an issue of interest since the beginning of the nineteenth century (Côté 2004). One period in this chronicle of deer population that is of particular historical importance was when the population of White-Tailed deer was actually scarce. It has only been since the turn of the twentieth century that the deer population began its unabated rise to the numbers we observe today. Before this time, white-tailed deer were considered something of a rarity. What allowed for this growth was the anthropogenic removal of those predators that found deer as their prey. Concurrent with the extirpation of wolves and cougars from the Northeast was the commencement of large logging operations in the same area (Levey 2006, Alverson 1988). It has long been observed that the process of logging creates just the very habitat in which generalist herbivores, such as the white-tailed deer, thrive. It is the young and low to the ground early successional vegetation that provides deer with an extremely abundant and accessible food source. It was the combination of predator removal and the creation of prime habitat that caused the explosion in the deer population. (Alverson 1988).

### **Condition Analysis**

In addition to there being a well documented past of the deer population problem, current conditions have also undergone extensive analysis. Current condition analysis has been much focused on the ecological effects of a large deer population toward to the goal of discovering what ill effects an overabundant deer population can have on an ecosystem. As mentioned above, deer have significant effects on understory vegetation found within forested habitats. Where deer densities are highest, vegetation is most frequently browsed. It was noted by Augustine (1998) that the process of suburban development in areas such as Southeastern Pennsylvania is markedly similar to the older process of logging in its effect on forested landscapes. Current removal of forested areas, like logging in the past, provides an exquisite habitat capable of supporting large deer populations. Augustine's study found that the extreme changes in the forest habitat combined with an increased deer population has the ability to support such high rates of deer grazing that fragile understory flowering plants, known as forbes, are consumed to the point of total removal from the forest ecosystem.

Deer-plant interactions are a relationship of particular importance when attempting to understand the effects of an increased deer population. One dynamic of this relationship of particular importance is the effect deer have on the abundance of certain invasive plant species. The most significant factor relating to deer's ability to influence invasive species abundance is their tendency to be a generalist consumer of vegetation. The overabundance of deer in conjunction with their generalist diet has the effect of severely changing the representation of many plant species in a forested area. Eschtruth (2008) concluded that this reduction in the diversity of a forest community provides an opportunity for increased rates of invasion by certain invasive species. In effect, the deer remove any competition some invasive species would otherwise have to face.

As a result of intensive research concerning deer overabundance, it has been shown that

Deer browsing has an effect that reaches beyond influencing those plant species that the deer consume directly. The negative effects have been extended to include the entire vegetative community of a habitat. These extensive effects of an overabundant deer population were the subject of research in a 10 year study in the Northern forests of PA. Horsley *et al.* (2003) were able to reveal a significant negative linear trend between deer density and species richness in these Northern forests. The targeting of a particular plant species by deer causes the population of that species to rapidly decline. This decline in certain species causes those species that are not targeted by deer to experience an unusual freedom of growth. The net effect of this process is the overall

alteration of the vegetation of an ecosystem that experiences high deer population densities (Horsley, 2003). Equally important to the biological conditions of those areas affected by deer populations, are the current conditions in management policies that influence the decision making processes that address the identified biological effects. A significant aspect of deer management policy is the use of hunting as a control mechanism. In recent years there has been significant support given to the targeting of antlerless deer as a control mechanism. Bhandari et al. (2006) investigated the motivations and attitudes of hunters in relation to how these influenced the implementation of hunting as part of the management strategy. Significant factors affecting hunter motivation and attitude toward antlerless deer harvest were the perception hunters had of hunting as a management tool and the recognition of damage to forest communities caused by overabundant deer populations.

In addition to hunter perception being an important role in management practices, the topic of hunter access to land poses an equally important condition (Bhandari 2006). Land available to hunters for deer harvest has experienced a decline. This decrease in land availability poses extreme difficulty in the attempt to implement deer management strategies. Expansion of human population to rural areas and the subsequent urbanization is a significant cause of the reduction of land availability.

### **Projections**

The current conditions associated with the deer overabundance problem have drastic implications concerning the future of this issue. The reemergence of logging operations, the divergence from agricultural land use and the urbanization of previously forested landscapes are have the effect of further increasing the availability of edge habitat to White-tailed deer. Due to the long absence of logging from the Pennsylvania area since the beginning of the 20<sup>th</sup> century, forest have had the opportunity to mature and are again increasing in the amount of valuable timber. The abandonment of agriculture causes the growth of early succesional habitat, which supports the very vegetation which supports large deer populations. Fragmentation of old-growth forests by either public entities for the construction of roadways, or private owners for the construction of homes will also continue to provide prime habitat to the still expanding deer population (Horsley 2003).

Although some species greatly benefit from deer generalist browsing, other species are utterly obliterated and the entire vegetative community is altered. If edge habitat is continued to be produced, the deer population is likely to grow, and the continuous change in forest community composition will be maintained. The net result of this process is ecosystem alteration.

### **Alternatives**

The role humans play in this problem of White-tailed deer overabundance cannot be ignored. The mechanism of our own expansion has been instrumental in providing habitats extremely suitable for supporting large deer populations. In light of the fact that our actions have greatly contributed to the formation of this problem, we must consider ways in which our actions can work toward a solution.

Let me begin by introducing, and immediately invalidating, two options that have been considered in the discussion of how to reduce the White-tailed deer population. These two options are Deer repellants and contraceptives. Superficially, these two options appear as easy and effective alternatives. These options provide for a solution that does not require the reduction of a population by hunting. As a result, repellents and contraceptives often arise as politically appealing alternatives. Solutions of this type, however, are prohibitively expensive (Lauber, 2000). Not only have these two option been proven costly, but also ineffectual. The success of contraceptives has only been observed on small, controlled deer populations. When used on larger samples, contraceptives did not significantly affect the breeding potential of a population (Seagle 1995). These two factors, both cost and effectiveness, contribute to the impracticality of repellants and contraceptives as valid population controls. When solutions such as these are so superficially appealing, they become road blocks to advancement toward a practical solution by way of sequestering attention, time and thought that could otherwise be devoted to more legitimate options.

An admittedly less politically appealing, though more practical, solution to an overabundant deer population is an emphasis on hunting. Although hunting is a legitimate option when considering how to address the problem of deer overabundance, current hunting practices will not prove sufficient. Perhaps the most prominent block preventing the sufficiency of hunting as a population solution is the target of common deer hunting. Since the advent of mass produced goods and grocery stores, hunting has increasingly become more of a recreational activity. The change in hunting from a necessity to a recreation has caused the common target of hunting to change from the weakest to strongest specimens. When hunting for survival, predators target the most easily capture prey. That is to say, it is the youngest, oldest, or otherwise most susceptible targets that become a predator's sustenance. The development of hunting as a recreational activity, however, targets a different category of prey. When hunting becomes an activity of sport, it is no longer the most fragile animals that are targeted, but the strongest and most visually appealing. The deer that most comfortably fit under this new criterion are the strong male deer. These reason male deer are an ineffectual target when trying to use hunting as a population control mechanism is that a relatively small number of

male deer can mate with a very large number of does. For this reason, if current hunting targets are maintained, even a very large increase in the amount of hunting will have an insubstantial effect on the net population growth of white-tailed deer.

The issues associated with male deer being the most prominent target of sport hunting necessitates a change in current hunting practices. In order for hunting to become a viable method of addressing deer overabundance, female deer will need to become a primary target. It is the systematic removal of does that will prove the most effectual implementation of hunting as a control strategy. The reason for the effectiveness of this strategy is attributable to the social organization on which deer populations are based. In a twenty year study focused on the observation of deer ecology, Porter (1991) noted that female deer remain with their families and close to where they were born throughout their lives, whereas male deer leave their families when they reach maturity. Deer social structure being organized in this way suggests that deer populations expand from central concentrations of female deer. The removal of female deer through hunting from those central locations can have the result of reducing the overall concentrations of deer in that area. The effect of this form of management is not only a reduction in deer population (as could also be achieved by the removal of male deer) but sustained low populations of deer from sites where females are removed. An understanding of this deer ecology leads to more effectual management strategies.

The most effectual, and simultaneously most difficult, management strategy for deer overabundance is the decline in the process of forest fragmentation. As previously discussed, fragmented forest landscapes provide the most supportive environment for deer population expansion. Forest fragmentation is not only a result of logging operations, but also a result of the expansion of human populations into previously undeveloped land. This process of urbanization is perhaps the largest adversary we face concerning the issue of deer overabundance, and it is an adversary that we are the propagators of. We claim that there is a problem of deer invading our society. They invade our roadways, causing an increase in motor vehicle accidents. They invade our back yards and agricultural systems, causing millions of dollars of property and crop damage each year. I will urge us, however, to be cautious about which population we vilify. Is it the deer population that is invading our habitat, or is it our population that is invading theirs? When considering how to best manage the deer population problem, it would be irresponsible to not recognize the effects our own actions have had in perpetuating this issue to point of being problematic.

As the process of suburbanization carries on and as deer and human populations continue to experience close

interaction, a process of learning with how to best approach the alternatives necessary will be required. With problems of any magnitude, it is important that all those involved with the issue become as informed as possible about the intricacies of the problem they face. It is the scale of this problem that makes this process of learning so difficult. Because an over abundant deer population has an effect on entire communities, it is important that this issue is discussed at the community level. If we do not participate in discussion, then we cannot expect the changes we identify as necessary to occur (Lauber 2006). It is my suggestion that these community discussions be focused on the alternatives most likely to effectively address the problem of white-tailed deer overabundance. As my examination has indicated, I propose that focusing hunting on female deer and implementing regulations toward the goal of stopping the fragmentation of forests are the alternatives most deserving of attention in this issue.

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# Effects of Marcellus Shale Gas Drilling Wastewater Discharge on Trihalomethane Formation

Nick Rossi | *Lancaster Laboratories*

## ABSTRACT

This study examined the effects of untreated Marcellus Shale gas drilling wastewater on the formation of brominated trihalomethanes (THMs) in river water. Brominated THMs are byproducts formed during chlorination of drinking water and are known to have negative health effects. Untreated Marcellus Shale gas drilling wastewater samples and three Pennsylvania river water samples were obtained and tested for bromide and total dissolved solids (TDS). Composites consisting of river water and gas drilling water were treated with chlorine, incubated and tested for THMs.

Results of the bromide testing determined levels in the river samples were below the method detection limits and 982 mg/L of bromide present in the gas drilling water. THM testing results indicated an increase in brominated THMs and total THMs (TTHMs) with additions of gas drilling wastewater. This study suggests gas drilling wastewater containing bromide as a potential factor for recent increases in THM formation in several Pennsylvania drinking water facilities.

## BACKGROUND

Trihalomethanes (THMs) are a type of disinfection by-product (DBP) that forms as a result of chlorinating natural waters for the drinking water treatment process. Environmental Protection Agency (EPA) regulations identify a maximum allowable limit of 80ppb for TTHMs in public drinking water systems. (1)THMs are a group of four compounds that include chloroform, bromoform, bromodichloromethane, and dibromochloromethane. Studies have shown these compounds to be carcinogenic and mutagenic. A higher health concern is associated with brominated THMs. THMs form upon the reaction of chlorine with natural organic matter in water. The presence of bromide in water can result in higher levels of brominated THMs and TTHMs being formed.

A possible source of bromide in Pennsylvania streams is Marcellus Shale gas drilling wastewater. The drilling and hydrofracking process used to extract natural gas involves pumping 2-10 million gallons of fracking fluid,

primarily composed of fresh water, into the shale. The fluid is exposed to and may contain high amounts of bromide, along with sodium chloride and other inorganics found in the formation brines. (2) A portion of the fluid returns from the shale as wastewater and may be transported to a Centralized Waste Treatment (CWT) or Publically Owned Treatment Work (POTW) for treatment prior to discharge into streams. Subsequently, these same streams receiving gas drilling wastewater discharge may serve as drinking water sources. Increased concentrations of brominated THMs in some Pennsylvania drinking water systems have raised the need to determine the effect of the gas drilling wastewater on THM formation.

## METHODS

Untreated Marcellus Shale gas drilling wastewater was obtained from Westmoreland County, PA. Susquehanna, Ohio, and Alleghany River water samples were also received during January 2011. Susquehanna River water was collected from Columbia, PA, Ohio River water from Coraopolis, PA, and Alleghany River water from Pittsburgh, PA. Laboratory analysis of the initial raw river and gas drilling water samples was performed for bromide using an ion chromatograph and the total dissolved solids (TDS) also determined. Filtration through a glass micro fiber filter, evaporation, drying, desiccation and weighing on an analytical balance were used for the TDS.

Small percentages of gas drilling water were added to the river water samples to form composites. Composite samples were treated with liquid chlorine and incubated for approximately 24 hours to simulate that of a drinking water treatment plant. A control, consisting of 100% river water was established as a background for each river. In addition to the control, percentages of gas drilling wastewater in the composites include 0.001%, 0.005%, 0.010%, 0.020%, 0.050%, and 0.100%. Chlorine stock solution was added to the composites to achieve chlorine residual comparable to that found in public drinking waters. All composites were

tested for THMs present after the incubation period using gas chromatography mass spectrometry following EPA drinking water method 524.2. Two test sets were performed on the Susquehanna River water and one set of tests for the Ohio and Allegheny River waters.

## RESULTS

Bromide, the primary component influencing THM formation in this study, was not present at detectable levels in any of the rivers. In comparison, the gas drilling wastewater contained 982 mg/L of bromide. TDS levels were very comparable for all three rivers, with a range of 195-208 mg/L. Likewise, TDS results were substantially higher in the gas drilling water due to salts and formation brines picked up in the hydrofracking process. (Table 1)

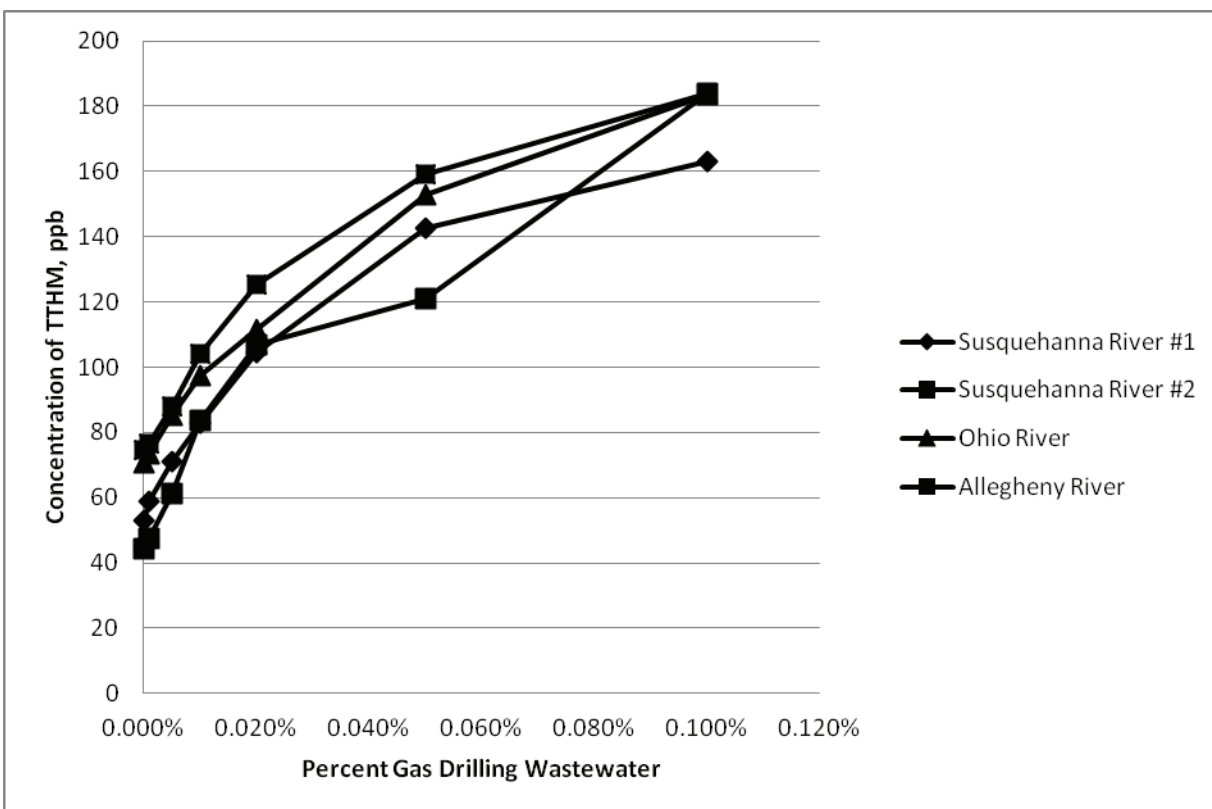
**Table 1** – Bromide and TDS Results

Sample	Bromide mg/L	TDS mg/L
Susquehanna River	n.d.	197
Ohio River	n.d.	208
Allegheny River	n.d.	195
Gas Drilling Water	982	55,900

n.d. = non detect

Results of the THM testing indicated increasing concentrations of brominated and TTHMs with increasing percentages of gas drilling wastewater in the composites. As the percentage of gas drilling wastewater in the composites increased, the concentrations of TTHMs also increased. This increase in TTHMs, with increasing amounts of gas drilling water, was consistent in all three river samples. Another observation from the data is the small percentage of gas drilling wastewater required for measuring increases in TTHM formation. In all tests sets, the smallest percent of gas drilling wastewater in the composites, 0.001%, was enough to have a measureable increase in the TTHMs. This observation was consistent for the composites created from each of the three rivers. (Figure 1).

The increasing trend of TTHMs was a result of the in-



**Figure 1** – TTHM Results

creasing formation of bromoform and dibromochloromethane. (Figure 2) Substantial increase in brominated THMs can be observed by examining the concentrations of the four individual THMs at the different percentages of gas drilling wastewater. (Figure 2) Chloroform, the only THM that does not contain bromine, was the dominant THM in the control samples and its concentration consistently decreased as the percentage of gas drilling wastewater increased. Consequently, bromoform and dibromochloromethane, both containing bromine, increased markedly. This created higher concentrations of TTHMs as the gas drilling wastewater added increased (Figure 2). This pattern of a substantial increase in brominated and TTHMs was consistent among the rivers as the amount of gas drilling wastewater added increased. All three rivers had concentrations of individual THMs very similar to the pattern exhibited by the Ohio River for each percentage of gas drilling wastewater.

Additionally, chlorine demand was calculated from the chlorine residual and the applied chlorine dosage at each percentage of gas drilling wastewater for the com-

posites. The chlorine demand increased as the percentage of gas drilling wastewater added increased, likely due to the bromide in the gas drilling wastewater.

All THM data from the rivers were plotted and a trendline developed to illustrate the correlation between the percent of gas drilling wastewater present and the TTHMs formed. Additionally, a line was drawn on the graph at 80 ppb to illustrate the impact small amounts of gas drilling wastewater had on THM formation in this study. Data points above the 80 ppb line would exceed the EPA limits for drinking water systems. All TTHM concentrations in the composites containing 0.01% or greater gas drilling water were above 80 ppb. (Figure 3) There are several site variables that influence the formation of THMs including temperature, pH, organic matter in the water, and the bromide content of the gas drilling water. Additionally, results of TTHM concentrations will likely vary among sites and seasons of the year.

Small differences were found in the data among the rivers in this study. The primary difference among the three rivers are that the concentrations of brominated

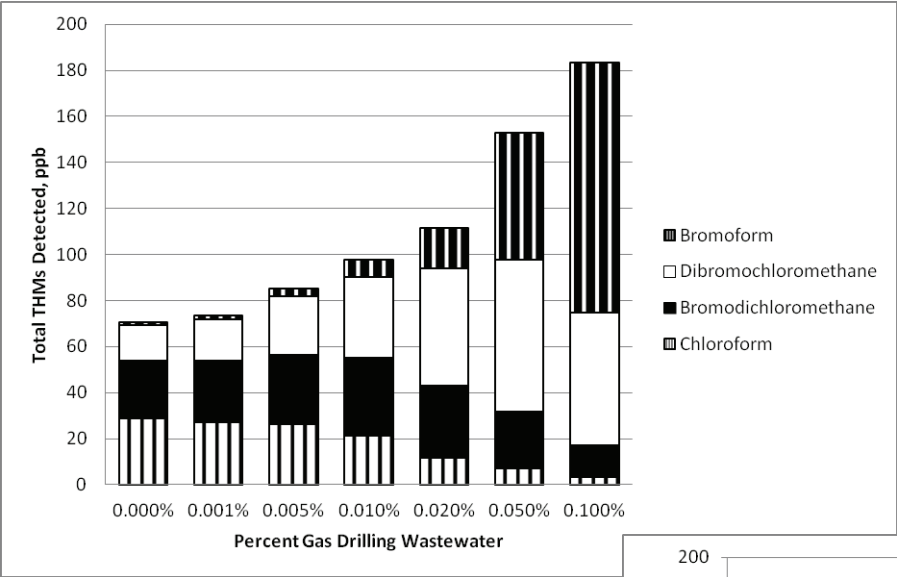
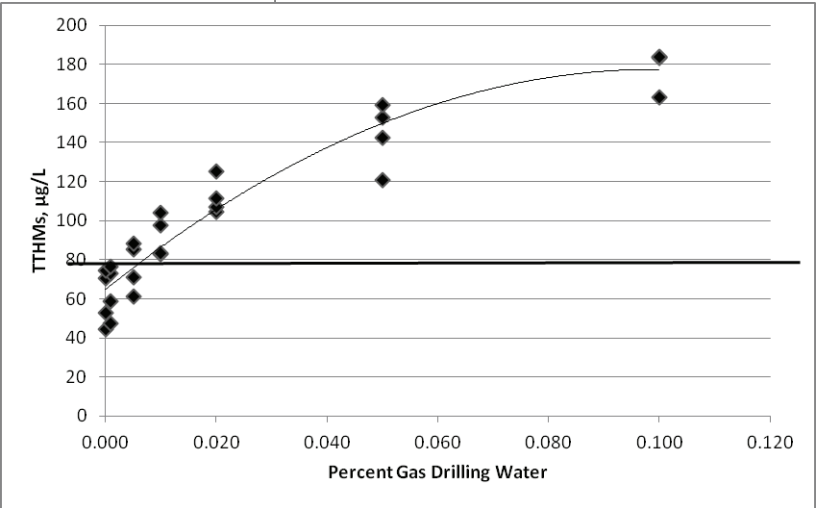


Figure 2 (left)- Individual THM results for the Ohio River

Figure 3 (right) – Data points showing trendline, with the EPA limit of 80 ppb marked



and TTHMs present are higher in the Ohio and Allegheny River as compared to the Susquehanna. There were not any apparent reasons found in this study that would account for the variability among the rivers. There is a possibility that the Ohio and Allegheny Rivers had higher concentrations of bromide than the Susquehanna River, which were below the detection limit of the bromide analysis. Further, sampling locations from the Allegheny and Ohio Rivers are located in a region of the state which is currently affected by gas drilling wastewater discharge and other potential sources of bromide, such as acid mine drainage. Minor differences were also found between the two sets of tests performed on the Susquehanna River. However, all river samples exhibited a similar pattern of increasing TTHMs with increasing percentages of gas drilling wastewater.

## CONCLUSIONS

The results of this bench test research demonstrate increasing concentrations of brominated THMs with the addition of untreated Marcellus Shale gas drilling wastewater to river waters upon chlorination. Bromide was below method detection limits for each of the river waters and at 982 mg/L in the gas drilling wastewater. These results suggest the bromide containing gas drilling wastewater as a large contributor to the increased TTHM concentrations. Consistencies among the TTHM results of the three different river waters support that similar results could be expected using other water sources. Results of this project may help explain the recent increases in TTHMs observed in Pennsylvania drinking water systems that indirectly receive Marcellus Shale gas drilling wastewater. The potential for brominated THM formation is higher when bromide containing gas drilling wastewater is discharged into drinking water sources.

Further research, including field data, may better clarify the relationship between the gas drilling wastewater, bromide, and THM formation. Since untreated gas drilling wastewater was used in this study, information on the effect of the wastewater treatment process would be beneficial. Additionally, more research is needed to further understand the contribution bromide alone in wastewater has on THM formation.

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[factsheet.cfm](#)

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*Nicholas Rossi is an Environmental Chemist at Lancaster Laboratories and 2011 graduate of the Master of Environmental Control Program at Penn State Harrisburg. This research and paper was performed as part of his Master's coursework at Penn State Harrisburg. Dr. Yuenfeng Xie, Professor of Environmental Engineering, and Mitch Spear, Laboratory Manager, served as advisors for this paper.*



# 2012 Annual Conference

Brook Gabel and Colleen Meiswich, Conference Chairs, AD Marble & Company

The 2012 PAEP Annual Conference was held at the historic Shawnee Inn & Golf Resort near the Pocono Mountains and Stroudsburg, Pennsylvania. The conference was an impressive gathering of environmental professionals from across the state, offering the opportunity to network and learn about current issues impacting the profession. The three-day conference began on Wednesday May 9th with a kayaking trip down the Delaware River and concluded on Friday May 11<sup>th</sup> with the Annual PAEP General Member Meeting and a few outdoor sessions.

The sluggish economy and dependence on foreign energy has raised the age-old question associated with our profession: how do we bridge the gap between protecting the environment and promoting economic growth and use of domestic energy? This concern influenced the theme of this year's conference: "Bridging the Gap: Connecting Principles and Practices." It also reflects the conference's location on the edge of the Delaware Water Gap National Recreation Area.

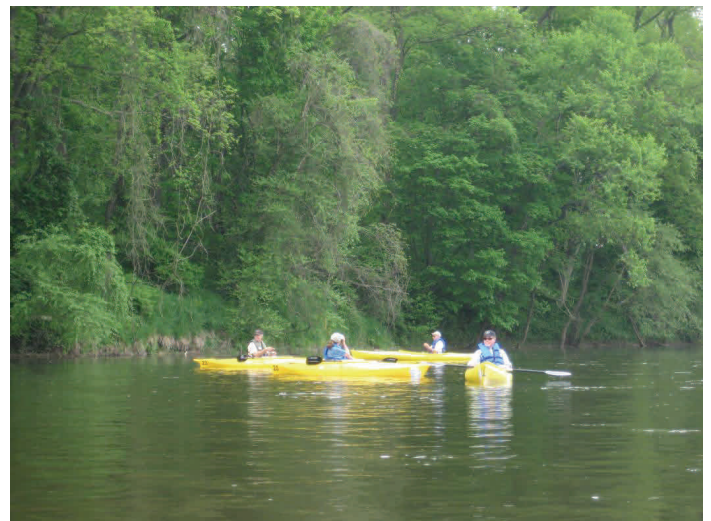
This year's conference included twelve presentations that covered many subjects relevant to the issues of today's environmental professional. Sessions touched upon Marcellus Shale, Section 6(f), open space economics, green streets design, purpose and need development, community energy independence, stormwater management, sustainability, environmental credits, and PADEP's newly formed Bureau of Environmental Cleanup and Brownfields. Speakers included researchers, federal and state agency representatives, and private consultants. In addition, conference attendees were able to choose from two different traveling work-

shops on Friday: a field wetland training or a tour of the green efforts of the Shawnee Inn & Golf Resort.

DCNR Deputy Secretary for Parks and Forestry Ellen Ferretti, was the keynote speaker for the conference. Ms. Ferretti was named deputy for parks and forestry in June 2011. In a thoughtful and informative presentation, she shared her responsibilities for managing and directing the operations of the bureaus of state parks, forestry, and facility, design and construction.

Many were captivated by Shawnee Inn & Golf Resort's majestic scenery and historic charm. Shawnee Inn is located on the edge of the pristine Delaware Water Gap National Recreation Area and on the banks of the wild and scenic Delaware River. The wealth of outdoor recreation opportunities such as kayaking, rafting, canoeing, biking, golfing, hiking, and fishing were available to conference attendees conveniently on the Inn's grounds.

For those of you who were unable to join us for the 2012 conference, we hope to see you in 2013!





# Regulatory Updates

Mitchell Burack, Esq.

## CEQ Guidance on NEPA Review and Streamlining

The new CEQ guidance was published 3/6/12, and is available at, <http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/efficiencies-guidance>.

The purpose of the new guidance was to outline time-saving strategies and tools already in place that can be used to make the reviews of EAs and EISs more efficient. Several comments suggested that this new guidance does nothing but rehash the previous CEQ guidance. The key points are:

Make NEPA documents more concise: Reviews should not be “encyclopedias of all applicable information,” but should include only enough discussion to show why more study is not warranted on insignificant issues.

Integrate reviews early in the planning process: For actions initiated by non-federal entities, federal agencies should guide applicants to gather and develop environmental information and analyses in advance of submitting applications. NEPA should not become an after-the-fact process that justifies decisions that have already been made.

Scoping: To effectuate integrated decision making, avoid duplication, and focus the NEPA review, the CEQ Regulations provide for “scoping.” In scoping, the lead agency determines the issues that the EA or EIS will address and identifies the significant impacts related to the proposed action that will be considered in the analysis. The scoping process provides an early opportunity to plan collaboration with other governments, assign responsibilities, and develop the planning and decision making schedule.

Inter-Governmental Coordination: CEQ encourages the Federal Government to collaborate with state and local governments to avoid duplication. This collaboration will result in having the reviews of the plan run concurrently and not consecutively.

Coordinating Reviews and Documents under Other Applicable Laws: The guidance requires that agencies should try to integrate their draft EIS with environmental impact analyses and related surveys and studies re-

quired by other statutes or Executive Orders.

Adopt existing EAs or EISs and incorporate material by reference: CEQ regulations provide for the adoption of one federal agency’s EIS or portion of that EIS by another federal agency preparing an EIS or EA.

Expedition of Responses to Comments: The guidance recommends that agencies facilitate public comments by publishing EAs and EISs and the comments received on the agency’s website.

Set clear time lines for NEPA reviews: CEQ recommends that agencies establish clear time limits and designate a lead person to shepherd the NEPA review process.

## OSHA Hazard Communication

OSHA has published final rules amending its Haz Comm regulations at 40 CFR 1910, 1915 and 1926 [77 Fed. Reg. 17574 (Mar.26, 2012)]. A comparison of the old and new regulation can be found at, [http://www.osha.gov/dsg/hazcom/hcs\\_side\\_by\\_side\\_draft\\_100109.pdf](http://www.osha.gov/dsg/hazcom/hcs_side_by_side_draft_100109.pdf)

The purpose of the rule is to conform to the United Nations’ protocol for classification and labeling of chemicals (Globally Harmonized System of Classification and Labeling of Chemicals [GHS]). The rule is intended to improve employees’ knowledge about the chemicals that they will encounter on the job and to reduce chemically related illnesses and injuries. This rule will have the greatest impact on importers and manufacturers of hazardous chemicals. The new Haz Comm Standard includes items related to : safety data sheets, labels, hazardous classification, and training requirements.

The first major change is that the new rule will require manufacturers and importers to re-evaluate and reclassify chemicals based on new criteria for health and physical hazards to ensure that the chemicals are classified appropriately. OSHA, as of this time, does not anticipate any significant changes to the chemicals covered by HCS. The next change relates to the method of communicating the hazard of the chemical through labels. Once a chemical is classified, the GHS provides

the specific core information to convey to users of that chemical through labels. Labels must include a signal word, a pictogram, a hazard statement, and precautionary statement for each hazard class and category. Next, the revised HCS requires a new format for safety data sheets with 16 specific sections. Under the GHS, the ANSI Z400.1 16-section format is used for the safety data sheet (SDS) (no longer called material safety data sheet). Many chemical suppliers already use this format, but are not currently required to. The training requirements under the new standard include the new GHS elements but are otherwise similar to the previous standard. In addition to current training requirements, workers must be trained by December 1, 2013 on the label and SDS changes.

As a means of ensuring proper execution, OSHA instituted a gradual phase-in process for implementation of the revised HCS. Those States which have adopted their own plans in partnership with OSHA will have to update their plans within six months of publication of the final rule. Each State's existing requirements will continue to be in effect until it adopts the required revisions. Employers are required to train their employees on the new label and SDS changes by December 1, 2013.

#### **New Source Performance Standards for Fossil Fuel Fired Electric Utility Generating Units**

EPA has proposed NSPS for CO<sub>2</sub> emissions from fossil fuel burning electric utilities. [See 77 Fed. Reg. 22392 (April 13, 2012)]

Fossil fuel-fired electric utility generating units are the largest stationary producer of greenhouse gases (GHG) in the United States, accounting for roughly 40% of all U.S. anthropogenic carbon dioxide emissions. Thus, EPA is proposing new source performance standards (NSPS) to curb the carbon dioxide emissions from these sources. This is the first time that the EPA has proposed a greenhouse emission standard for stationary sources. The proposed regulations are a direct result of settlements reached in 2010 as part of an effort to avoid litigation over electric utility air standards. EPA anticipates that "the proposed electric utility generating units' greenhouse gas NSPS will result in negligible carbon dioxide emission changes, energy impacts,

quantified benefits, costs, and economic impacts by 2020, and does not anticipate this rule will have any impacts on the price of electricity, employment, or labor markets, or the U.S. economy." This new standard will encourage the deployment of carbon capture and storage for new coal fired power plants.

The new standards will require new fossil fuel-fired electric utility greater than 25 megawatt electric (MWe) to meet an output-based standard of 1,000 pounds of CO<sub>2</sub> per megawatt-hour (lb CO<sub>2</sub>/MWh). The EPA based its new standards on the demonstrated performance of natural gas combined cycle units because these units are currently used throughout the country and have been projected to be the predominant fossil fuel-fired technology in the future due to the increased availability and lower cost for natural gas. Additionally, the EPA has determined that NGCC qualifies as the best system of emission reduction. The EPA is seeking comments on its new standard and compliance options through June 12, 2012.

#### **Act 13 of 2012**

On February 14, 2012, Governor Corbett signed Act 13 with some provisions going into effect upon signing and some provisions that became effective last week. This Act's goal is to better regulate fracking in conjunction with gas drilling, and to provide funding to state agencies and municipalities directly impacted by this industry.

The impact fee will be levied on unconventional hydraulic fracturing wells. It will be levied for 15 years with the amount levied decreasing each year. Counties may impose the fee if unconventional gas wells are located within their boundaries. Those counties had until last Monday, April 16th, to pass an ordinance to levy the fee with specific language required by Act 13. If a county failed to do so, however, the municipalities have a "one time" opportunity to override the county decision not to opt into the fee by passing a resolution by fifty percent of the county's municipalities or by municipalities with fifty percent of the county's population by June 13, 2012. Without a resolution or ordinance, a county will be ineligible to receive funds for that calendar year; this prohibition on receiving funds will remain in effect until the county passes ordinance imposing the fee. PUC will collect the fees and deposit them in

to the Unconventional Gas Well Fund. The majority of these fees will be used to cover the local impacts of drilling and will be given to select state agencies. The Act, however, places limits on the use of funds .

The Act provides other benefits for municipalities outside of the impact fees. The Act establishes a natural gas energy development program. Municipalities and authorities are eligible under this program to receive funding for buying or converting vehicle fleets to natural gas. Furthermore, the Act implements new permitting rules. This Act will also better protect water resources. Water quality and quantity replacement standards have been made consistent with the Safe Drinking Water Act. DEP will now regulate the wastewater transportation. In addition, this Act will provide for more transparency by requiring production, inspection, and cleanup activity reports to be posted online. The model used, Colorado's hydraulic fracturing disclosure law, will be implemented through this Act as well. The Act will impose harsher fines for violations of this chapter. The civil fines will be tripled from \$25,000 plus \$1,000 for each continuing day of violation to \$75,000 plus \$5,000 for each continuing day. Counties and municipalities may initiate court actions to restrain violations of the Act.

**DRBC Proposed Regulations on Gas Drilling** (page 437 of vol 1)

This regulation has been and continues to be extremely politically charged.

On November 8, 2011, the Delaware River Basin (DRBC) published draft revised regulations on water quality to protect the water resources of the Delaware River Basin during the construction and operation of natural gas development projects. The full text of the draft regulations is available on DRBC's website, <http://www.state.nj.us/drbc/programs/natural/draft-regulations.html>.

The regulations require project sponsors to submit and obtain approval for natural gas development plans ("NGDP") which consist of a project sponsor's overall plan for siting and accessing natural gas development projects in the entire Basin leasehold or property. The regulations also propose to limit approvals during the first 18 months of the program to 300 wells. At that point the Commission will perform an operational review. There are still some unresolved issues that the commissioners are working through and no new date has yet been announced for a vote on the draft regulations.

**Policy for Erosion and Sediment Control General Permit for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities** - January 17, 2012 (PADEP)

(Page 340 of ELF vol. 2)

On January 17, 2012, DEP published guidance on the erosion and sediment general permit for oil and gas activities. Through this guidance, the DEP will implement Chapter 102 requirements for earth disturbance activities associated with oil and gas exploration and related activities. According to the guidance, everyone undertaking oil and gas activities must implement and maintain Erosion and Sediment Control Best Management Practices. The guidance outlines the process to obtain such a permit. Additionally, the guidance requires that certain erosion and sediment control practices including permanent and temporary stabilization and well site restoration. Furthermore, the guidance provides the steps that are to be taken if the well site is to be developed in phases. Upon the completion of the post drilling restoration or permanent restoration of the well site and the BMPs are installed, the guidance requires that the permittee submit a notice of termination. Until that notice is approved, the permittee and co-permittee are responsible for the compliance with the permit terms and conditions.

**Addressing Spills and Releases from Oil & Gas Wells and Related Operations**- 2/10/12 (page 378 of ELF vol. 2) (PADEP)

DEP has published a draft policy to facilitate a consistent and uniform general response to an oil or gas spill or release by those working in the oil and gas extraction industry. The policy requires that before waste is generated; those working in the oil and gas industry must prepare and implement a site specific Preparedness, Prevention, and Contingency plan for fluids, residual waste, and drill cuttings. The plan must include procedures to notify the appropriate DEP office about all spills, releases, and emergencies; it should also include the immediate response and clean-up activities in the event of such an incident. The policy outlines the type of spills that must be reported to the DEP. Additionally, the policy discusses the proper remediation of a spill or release related to oil and gas operations. The policy recommends possible restoration steps for areas impacted by such a spill or release. The DEP will be soliciting comments on this policy until May 14, 2012.

# PAEP Regional Sections and P2E2 Roundtable

## Eastern Section

This year the Eastern Section started off with two great presentations. In January they held a joint meeting with the Pennsylvania Environmental Council and PAEP Central Section at Villanova where PADEP Secretary Krancer gave an informative presentation on the Marcellus Shale Issue. The meeting was attended by over 130 people. At the meeting Secretary Krancer noted that one of his departments pressing issues was the number of "Lazy Permit Application Packages" they continue to receive. These packages lack the required information for the PADEP staff to conduct a meaningful reviews and cause project delays.

In response to this information, in May the Eastern Section held the first in a series of workshops with PADEP and US Army Corps of Engineers staff to identify the various Chapter 105/Section 404 permit application issues they are encountering. the three hour workshop held at the Southeast Regional Office of the PADEP was attended by over 85 people including representatives from 6 public agencies and 70 companies.

What are some of the key deficiencies in Permit Applications:

- Wetlands Jurisdictional Determination Plans overall cluttered, remove as much extraneous information not pertinent to the delineation as possible.
- Revision dates on documents not updated.
- Failure to provide the metes and bounds for each water and wetland. (this can be a separate sheet).
- When a delineation is being field verified the flagging is not redone so it can be found in the field.
- Failure to provide CD-ROMs and a copy of the plans on 8.5 by 11 inch paper (Special Public Notice 10-02).
- Not using the correct (new) Regional Supplement Data Forms.
- Not allowing enough time for permit processing.
- Impacting resources before signed permit is received.
- Not reading permit and special conditions.

*(Applicability and seasonal restrictions, etc...)*

- Failure to request extension of permits 180 days in advance.

This year PAEP will be targeting key program areas where our State and Federal agencies are having problems so that we can help re-educate environmental professionals and our clients on efficiencies and proper reporting. We will also be teaming up with other professional associations so that we can continue to keep learning from the best of Pennsylvania's EPs.

Mitchell Burack, Esq and Joseph Musil, LEED-AP

Eastern Section Co-Chairs.

## Western Section

February 7, 2012 - Marcellus Shale: What you need to know about environmental permitting - the presentation touched upon the different environmental permitting requirements of Marcellus Shale projects including stream and wetland crossing permits, PASPGP-4, etc... .

April 3, 2012 - Natural Solutions for Stormwater Management - the session was geared to provide knowledge about how to identify opportunities to use river restoration, green infrastructure, and natural flood protection alternatives to reduce stormwater, reduce flood damages, improve quality of life, and promote downtown revitalization.

## Central Section

January 10, 2012 program featuring DEP Secretary Krancer was a great success! On January 10, the Eastern and Central Sections, and co-sponsor PA Environmental Council (PEC) , hosted a program at Villanova University, featuring Secretary Krancer discussing current issues on Marcellus Shale drilling. Approximately 100 attendees listened to the discussion which was preceded by a networking reception. PAEP made an impressive showing with over 50 members in attendance as well as several students and professors. Everything went well and the Section looks forward to future collaboration with PEC, as well as addi-



tional programs on this very relevant and sensitive topic.

March 23, 2012 the Central Section teamed up with the Student and Scholarship Committee and visited Susquehanna University to discuss resume tips with students and provide one-on-one assistance. Afterward there was a networking happy hour at BJ's in downtown Selinsgrove.

April 21, 2012 (Earth Day) - Central Section - PAEP and Paxton Creek Watershed & Education Association Tree Planting Event at Shutt Mill Park, Crooked Hill Road, Susquehanna Township, PA.

May 15, 2012—Central Section teamed with WTS Central PA to provide a lunch program entitled *The 2012 PADEP E&S Manual: Notable Changes in Design Guidance*. The long-awaited announcement of PADEP's updated Erosion and Sediment Pollution Control Pro-

ing construction. Proof of attendance was provided to all attendees for 1.0 PDH credit. Ms. Jessica Sizemore won the bottle of wine scholarship raffle – Thanks to all who participated and donated to the WTS and PAEP local scholarship funds!

The March 2012 manual includes new details for many BMPs, checklists for required plan content, 33 required standard notes, new specifications for BMPs, and many new approved options to mitigate sediment impacts to Pennsylvania's waterways. Some examples of BMP changes include a wood mat with geotextile for temporary wetland impacts, no excavation for rock construction entrances, time restrictions on temporary bypass methods, new equation for Manning's  $n$ , and a new detail for pumped water filter bags. Also included are new and revised ABACTs to be used in special protection watersheds.

Jeff MacKay is a founding principal of NTM Engineering, Inc., a Pennsylvania-based firm specializing in water resources and transportation engineering. He has 12 years of civil engineering experience that includes design and forensic engineering, technical training, policy writing, and design manual development. He authored PennDOT's first and current stormwater policy and spends much of his time as a liaison between PennDOT's and DEP's central and regional offices.



Photo from joint WTS/Central Section Event  
May 2012

gram Manual (E&S Manual) occurred on March 31. Designers and engineers can expect county conservation districts and other E&S plan reviewers to implement the new guidelines immediately. This presentation summarized the most significant changes in design guidance for E&S plans. Proof of attendance was provided for 1.0 PDH credit. Mr. Jeff MacKay, NTM Engineering, Inc., presented the newest Erosion and Sediment Pollution Control manual changes. DEP released a new manual in March 2012 that is hundreds of pages longer than its previous version. Jeff captivated the crowd as he discussed the ever-evolving nuisances of Pennsylvania's techniques to mitigate for erosion dur-



Photo from joint WTS/Central Section Event  
May 2012



## P2E2 Roundtable

The PAEP P2E2 Roundtable's first quarterly meeting was on ISO 50001 and was cosponsored by General Dynamics, PADEP, Northeastern Pennsylvania Alliance, and the U.S. Department of Energy. The workshop was held at the Scranton Army Ammunition Plant in Scranton, Lackawanna County, on March 15<sup>th</sup> and was comprised of nearly 50 attendees consisting mostly of businesses and industries that wanted to learn about energy management systems. Mr. Warren Weaver, EMS Consulting, conducted the training. The high participation of businesses will lead to more direct adoption and enhancement of energy management practices. Some businesses indicated that they will incorporate the energy management system into their existing environmental management systems, such as ISO 14000, and others will seek ISO 50001 certification. Attendees came from as far away as Iowa and the central and western areas of Pennsylvania.

Now program, the PAEP P2E2 Roundtable's efforts, and Wilkes University's Sustainability Certificate Program.

DOE's advanced manufacturing office is offering a series of four free webinars on Superior Energy Performance and energy management systems starting April 19. Registration information on Energy Management Series, Webinar 1: Introduction to an Energy Manage-



Left & Right Photos from P2E2's March Quarterly Meeting



The event was bolstered with case studies such as an article about Volvo, the first US facility to become ISO certified, and General Dynamic's presentation that discussed their involvement with DOE's Superior Energy Performance Program (SEP) and their quest to become ISO 50001 certified. General Dynamic's has had significant energy and cost reductions while preparing for the implementation the standard. Mr. Paul Scheining, Director of USDOE's SEP Program in Washington D.C., also attended. All participants enjoyed the tour of the manufacturing operations. The workshop afforded additional opportunities to learn about DOE's Superior Energy Performance Program, PENNTAP's Save Energy

-ment System can be found at [http://www1.eere.energy.gov/manufacturing/newsandevents/events\\_detail.html?event\\_id=6780](http://www1.eere.energy.gov/manufacturing/newsandevents/events_detail.html?event_id=6780). Part 1 of this 4 part series explains what an energy management system is, the benefits gained by real companies in the real world, an overview of the parts of the eGuide, and an introduction to Step 1.

The other three webinars are on Webinar 2: Planning for an Energy Management System, May 3, 2012; Webinar 3: The Do and Check Processes of an Energy Management System, May 10, 2012; and Webinar 4: The Act Process and Improving your Energy Management System, May 17, 2012. All webinars are from 1:00 to 3:00 PM. Additional information and registration can be found on US DOE's Advanced Manufacturing Office's website under Events <http://www1.eere.energy.gov/manufacturing/>.



# PAEP Committee Updates

## Student and Scholarship Committee

*Chair, Angela Schreffler, Michael Baker Jr., Inc.*

The Future of Environmental Professionals—2012 will be full of firsts for the PAEP Student and Scholarship Committee! One of PAEP's newest committees, we certainly have our work cut out for us this year. The Board came up with some great ideas in January that will become an integral part of its activities in the coming year. We welcome additional participation and ideas to this exciting committee aimed at furthering PAEP's mission and expanding its role in fostering new and future members.

Thanks to Mike Kenawell, Mike Bilger, Leigh Campetti, and Jason Minnich for driving up the river to Susquehanna University in March. Our student chapter, SU PAEP, had asked if we could come up and give environmental students assistance with resumes and general career advice. On a warm and beautiful afternoon, we met with freshmen - seniors to review resumes and give some tips to get their resumes ready for internships and their careers. Thanks to SU PAEP advisor, Dr. Jen Elick and student chair, Emily Grabenstein for planning the event – as

always, it was fun. Good luck to Emily and other graduating SU PAEP members!

April was busy preparing for a new program we are starting up – FREE PAEP membership to graduating environmental science seniors. This new program is a great way to introduce all the benefits of PAEP to our upcoming environmental professionals, as well as provide new professionals with networking and professional development opportunities to succeed in their first years in the professional world. Thanks to Moravian College professor, Dr. Frank Kuserk and student Emily Krall for spearheading our PA college environmental science contact database, which includes 95 colleges throughout the state.

Congratulations to the PAEP Annual Student Contest Winner, Dean Scott from Ursinus College. Dean won a free conference registration and hotel stay at PAEP's Annual Conference at the Shawnee Resort.



Shawnee Inn and Resort—Location of 2012 PAEP Annual Conference

The summer months will be spent on scholarship – coming up with criteria and running fundraisers, including the annual WTS/PAEP golf scholarship outing in August. Special thanks to the Western Section for running and contributing to various 50/50 raffles that benefit our scholarship fund! Finally, beginning in September, we will be announcing the opening of our first scholarship application period and will be awarding a scholarship this fall. ***There is still time to join the committee to be part of this exciting milestone!***

Please contact me for questions, ideas, or committee participation anytime – Angela Schreffler at [aschreffler@mbakercorp.com](mailto:aschreffler@mbakercorp.com) or 717.221.2049.

### Membership Committee

Co-chairs, Linda Zug and Keri Cimarolli

Hopefully by now all PAEP members have seen the membership sale PAEP is advertising, a Buy-One-Get-One membership offer. All 2011/2012 PAEP members can recruit a NEW PAEP member **for free** for the remaining 2012 year. Please take advantage of this situation. Our membership is growing and we are very close to that 300 number that we would like to hit by May, but can only do it with your help.

Our new membership committee is asking for ideas that we can use to promote our members accomplishments (both professional and personal) through our PAEP web blasts. We plan on highlighting career changes, projects, promotions, publications, corporate membership, etc. through a monthly PAEP membership email blast. So when you have updates, please forward to Keri or Linda – this will be an excellent opportunity to get your project and company recognized state-wide and beyond.

Please contact us with any membership ideas or if you would be interested in helping, we can always use the help – we can be reached at [lzug@cecinc.com](mailto:lzug@cecinc.com) and [kci-marolli@gatewayengineers.com](mailto:kci-marolli@gatewayengineers.com)

### PAEP and the State Transportation Innovation Council

PAEP has been asked to provide representation on the State's new State Transportation Innovation Council (STIC) and Technical Advisory Group (TAG). Below are PAEP's current members for each area represented:

STIC Representative—Duane Peters

Project Delivery TAG - Darlene Stringos-Walker

Public Information TAG - Mark Fedosick

Design TAG - Scott Sternberger

Environmental TAG - Steve Wiedemer

### Other PAEP Committee Contacts and Opportunities

*(For all vacant positions, contact a PAEP board member; contact information is provided in the Table of Contents section of the Newsletter and the PAEP Membership Directory)*

Government and Legislative Committee

Chair, Duane Peters, A.D. Marble & Company

Fundraising,

(Vacant)

Directory and Calendar

(Vacant)

Employment

(Vacant)

Conservation Heritage

(Vacant)

Continuing Education Accreditation

(Vacant)

Website

(Vacant)

Newsletter

Chair, Crystal Quintin, Geisinger Health System

Newsletter Subcommittees

Editing

(Vacant)

Article Solicitation

(Vacant)

Advertising

(Vacant)



## Announcements

PAEP is now on Facebook and Linked in—we aim to be more engaged than ever, so to stay on top of all things PAEP, be sure to “like” us and check us out on both sites.

## Acknowledgments

This is a new section aimed at highlighting member achievements such as promotions, new hires, and organizationally aligned projects where members may have gone above and beyond (follow PAEP ethics and guiding principles).



**Congratulations to SU PAEP recent graduates from the Susquehanna University Earth and Environmental Science Department!**

## Birthdays

To submit your birthday or a fellow member's birthday for the next quarter's issue (Fall 2012), please contact Terri Breon at, [info@paep.org](mailto:info@paep.org) and provide the person's name, birth date and company.

*Happy Real Birthday—Congratulations PAEP Member Crystal Quintin on the birth of her little girl, Elise Sophia Quintin-Carroll on April 21, 2012!*

## Volunteer Opportunities

This section will include volunteer opportunities for PAEP members such as stream clean-ups/fundraisers for non-PAEP and PAEP-sponsored events.

## PAEP Wants You!

*A number of PAEP Committees currently have vacancies and/or need additional volunteers. If any of the committees listed in the Committee Updates section of the newsletter appeal to you, please reach out to any PAEP Board Member and/or attend the next monthly Board Conference Call. Your participation and talents are what make PAEP a success, so please consider getting involved.*



# MEMBERSHIP SALE



The PAEP Board invites all current PAEP members to sponsor a new member with a free 2012 membership! 2012 PAEP membership is close to 275...our goal is to increase that number to 300! Hurry and take advantage of this Buy One Get One membership sale today!

**BOGO  
MEMBERSHIP**

## THE RULES

1. Existing 2012 PAEP members can sponsor ONE free membership.
2. There is no cost for the sponsor or the new member.
3. The new member can be a past PAEP member, but cannot have been a member of PAEP in 2011.
4. The New Member should include the Sponsor's name on the top of their application and email to:

[info@paep.org](mailto:info@paep.org)

### Questions??

Contact the Membership Committee

Linda Zug: [lzug@cecinc.com](mailto:lzug@cecinc.com) and/or

Keri Cimarolli: [kcimarolli@gatewayengineers.com](mailto:kcimarolli@gatewayengineers.com)





**The Pennsylvania Association of Environmental  
Professionals (PAEP)  
And  
The Women's Transportation Seminar (WTS) – Central  
PA Chapter**

**3<sup>rd</sup> Annual Scholarship Golf Outing**

**Thursday, September 20, 2012**

**Registration: 7:30am**

**Shotgun Start: 8:30am**

**Armitage Golf Club  
800 Orr's Bridge Road  
Mechanicsburg, PA 17050**

Mark your calendar and plan to join us to support the WTS and PAEP Scholarship Funds. The goal of WTS and PAEP is to assist deserving students in the pursuit of careers in transportation and the environment. By fostering the next generation of transportation and environmental professionals, we also serve our industry and ensure the continued improvement and enhancement of the world around us.

**So get a four-some together and come out and have a good time!!!  
Membership to PAEP or WTS is not a requirement to come and join in.**

**Armitage Golf Club measures over 6,000 yards from the back tees, with a par of 70. Armitage combines challenging greens, strategic bunkering, with narrow and sculpted fairways, provides an exciting test for golfers of all skill levels.**



# Legislative Update

*Used with Permission from Erik Ross, Senior Lobbyist*

## FY 2012-2013 Pennsylvania Budget

The newly passed FY '12-'13 State Budget, spends \$27.66 billion, increases spending by more than \$500 million from the Governor's \$27.15 billion proposed budget

The budget increases total state spending by about 1.5 percent over the 2011 – 2012 fiscal year without raising taxes. Some of the highlights contained in the FY 2012-2013 Budget and the various legislation required to implement the Budget include:

- Flat funding for higher education (PASSHE and the state related universities). In return, university administrators have agreed to keep student tuition increases below the rate of inflation for the upcoming year.
- Elimination of the \$150 million in state funded welfare cash assistance grants.
- A resource manufacturing tax credit starting in 2017 designed to entice a subsidiary of Royal Dutch Shell to build an ethane cracker plant in Southwest Pennsylvania.
- Teacher evaluation reform which will base more of an educator's evaluation on student performance, and professionalize the evaluations of principals.

### Budget Highlights

Ethane Cracker Plant Tax Credit: One of the final components agreed to near the end of negotiations between the Legislature and the Governor included the criticism of the Resource Manufacturing Credit for a company that locates an ethane cracker plant in Pennsylvania. The company could get a tax credit equal to \$0.05 per gallon of ethane purchased between 2017 and 2042 and used in manufacturing ethylene in this Commonwealth by a qualified taxpayer. The likely value of the tax credit is \$66 million a year.

Public-Private Partnerships: The General Assembly passed legislation that would allow companies to build, maintain or improve a transportation asset - such as a highway or bridge - which it would lease from the state. The state would maintain control of the asset, but the company could make a profit from it. The legislation,

which has been championed by Rep. Geist for years, is a part of the transportation funding solution from the Governor's **Transportation Funding & Advisory Commission (TFAC)** report.

### Upcoming Issues

Transportation Funding: With the state facing a \$3.5 billion a year transportation funding crisis to bring the system up to modern standards, Governor Corbett tasked a 36-member Transportation Funding Advisory Commission (TFAC) to develop a report to identify options for \$2.5 billion in recurring annual revenue for roads, bridges, mass transit and other transportation infrastructure.

The Commission offered Corbett a set of options, from which the governor will work with lawmakers on whatever legislation is deemed necessary.

Legislators in the House and Senate have introduced legislation to implement many of the options offered by the commission, including: increasing license and registration fees, uncapping the oil company franchise tax, diverting vehicle sales taxes into the motor license fund, funding less of the state police's costs from the motor license fund, increasing local transit matches, changing borrowing practices and consolidating mass transit programs and services. While all top ranking officials agree that increasing transportation funding is critical and there is a need to do something, the question remains, how this will get done? There are members that would like to see the issue addressed sooner rather than later due to the continued damage occurring to our roads and fear that an increase in the number of weight restricted and closed bridges, and degradation of roadway surfaces, balancing the political timing of addressing the issue is difficult.

In order to get an agreement, several legislators believe that the Governor should lead on the issue, noting that something will happen as soon as 26 Senators, 102 House members and the Governor can get on the same page.

While the Governor did sign into law Public- Private Part-

## FY 2012 Pennsylvania Budget (con't.)

nership legislation, which was one of the recommendations from the TFAC, legislators view it as one of the tools in the tool shed to help fund Pennsylvania's infrastructure.

### EPA Evaluates States' Final Phase II Watershed Implementation Plans for Restoring the Chesapeake Bay

In May 31, 2012, EPA released its evaluations of the final Phase II Watershed Implementation Plans (WIPs) from Pennsylvania, West Virginia, Delaware, Maryland, Virginia and the District of Columbia. Completion of the plans marks a significant stage in the Chesapeake Bay cleanup effort, and represents the local level planning needed to continue accelerating implementation of the necessary practices to restore the health and economic engine of the Bay watershed's streams and rivers.

The plans were developed by the states and the District with support from EPA, and in collaboration with local governments and conservation districts.

They outline steps each jurisdiction will take toward restoring clean water to the thousands of streams and rivers that make up the Chesapeake Bay watershed, and improving the quality of life for the more than 17 million people who live in the watershed.

"While significant progress continues to be made across the watershed, the Phase II WIPs represent a transition from planning to implement the necessary practices at the local level," said EPA mid-Atlantic Regional Administrator Shawn M. Garvin during a conference call with reporters today.

"We will continue to work closely with the states and the District as we reaffirm our shared commitment for restoring this incredibly valuable national resource."

Regional Administrator Garvin acknowledged that the jurisdictions are already doing much of this work, consistent with their Phase I WIP commitments. He added that the Chesapeake Bay Program partnership, including state and federal officials, have committed to having all of the needed pollution control measures in place to fully restore the Bay by no later than 2025.

Click [here](#) for a copy of EPA's comments on the State.

**Source:** EPA Press Release, 5/31/2012

## Pennsylvania Signs One-Year Renewal of Multi-State Water Agreement for Delaware River

Pennsylvania has signed a one-year renewal of an agreement governing the management of water in the Delaware River, the Pennsylvania Department of Environmental Protection announced.

The renewal of the flexible flow management program, which was also signed by fellow parties Delaware, New Jersey, New York and New York City, is effective Friday, June 1.

Pennsylvania is a party to the 1954 U.S. Supreme Court decree that established an equitable allocation of water use under federal common law.

"This agreement will ensure that the continual and steady flow of water in the Delaware River protects Philadelphia's water supply from salt water, which can flow in from the Atlantic Ocean," DEP Secretary Mike Krancner said. "This extension will allow all of the partners to work together this year to find longer-term solutions to the flow issues on the Delaware River."

The agreement allows for the occasional release of large volumes of cold water from reservoirs in New York to improve fishery habitats and ecology downstream as well as provide a balance in water supply throughout the states during drought conditions. The reservoirs provide drinking water for millions of residents in the four states.

The agreement also calls on New York to store less water in some of the reservoirs during most of the year, creating greater storage capacity during storm events to help reduce flooding downstream.

For more information, visit [www.dep.state.pa.us](http://www.dep.state.pa.us) or call 717-783-4693.

**Source:** DEP Press Release, 5/31/2012





## **Senate Democrats Unveil Infrastructure Investment Plan in Luzerne County**

On June 1, 2012, Northeastern Pennsylvania state Sens. John Yudichak and John Blake welcomed Senate Democratic Leader Jay Costa (D-Allegheny) and Senate Democratic Appropriations Chairman Vince Hughes (D-Philadelphia) to the site of a stalled construction project in Luzerne County to announce the details of a \$2.8 billion plan that would upgrade Pennsylvania's infrastructure and create thousands of jobs.

"Our plan will not only put Pennsylvanians back to work, but it will provide the necessary funding to move forward on critical transportation projects like the South Valley Parkway project where we are standing today," Yudichak said. "The Pennsylvania Infrastructure Investment Plan will not only improve the quality and safety of our roads and bridges, but will create thousands of jobs and encourage business development."

The Senate Democrats' "Pennsylvania Infrastructure Investment Plan" involves creative new solutions to leverage existing federal, state and private resources in support of \$2.8 billion in new infrastructure investment.

At the core of the plan is the creation of a new tax incentive program that would fund \$1.5 billion in water, sewer and public transit infrastructure improvements. The principal on the \$1.5 billion in bonds would be paid from already earmarked shale tax revenues and local contributions for mass transit projects. The plan would also use federal GARVEE bonds to generate \$1 billion to fund a short term transportation improvement plan.

"Our proposal is a fiscally responsible way to repair our infrastructure without overburdening future state budget or increasing taxes," Blake said.

"Pennsylvania - and especially Northeastern Pennsylvania - needs jobs. Investing in transportation and other public works infrastructure can provide them."

Another facet of the plan would refocus \$167 million now available through the Commonwealth Financing Authority (CFA) to make infrastructure investments for new commercial and industrial real estate developments.

These can attract new businesses as well as support in-state business expansion while financing more small business loans and new venture capital incentives.

"Without raising any taxes, the Senate Democratic plan will create jobs and make an investment in the future of Pennsylvania by improving and upgrading our infrastructure," Costa added. "This is a smart investment for the future of Pennsylvania and also a proven way to positively impact the state economy."

Finally, the Senate Democratic infrastructure investment plan will sustain the Commonwealth Universal Research Enhancement (CURE) program to invest \$60 million through our major academic research institutions for life science research and development.

"Senate Democrats understand that the clearest path to improving Pennsylvania's economy is through targeted investment in our infrastructure," Hughes said. "We have a real plan with clear, innovative solutions to leverage existing federal, state and private equity resources to address the dire needs of Pennsylvania's infrastructure."

Many other local business leaders and elected officials also participated in the news conference to lend their support to funding improvements to Pennsylvania's infrastructure.

**Source:** PASenate.com, 6/1/2012

## **PUC Clarifies Implementation of Pipeline Registry, Inspections, Assessments under Pipeline Safety Act**

On May 24, 2012, the Pennsylvania Public Utility Commission (PUC) clarified its Implementation Order as a continued step in implementing the Gas and Hazardous Liquids Pipelines Act (Act 127).

The Commission voted 5-0 to issue the Tentative Order indicating all pipeline operators in the Commonwealth of Pennsylvania of Class 1 transmission lines must register these lines with the Commission. All entities with Class 1 transmission 3 lines that have not previously filed must now file with the Commission by June 22, 2012. A Class 1 location is considered an offshore area or any class location unit that has 10 or fewer buildings intended for human occupancy. Interested parties may submit comments on or before June 1, 2012.

On Feb. 16, 2012, the Commission approved its Order, which began the process of creating a statewide registry for non-public utility gas and hazardous liquids pipeline equipment and facilities within the Commonwealth;



provides resources to conduct safety inspections to enforce Federal pipeline safety laws on certain classifications of pipeline; and assesses entities for the costs.

Final forms and other materials are available on the Commission's website. Act 127 directed the PUC to develop a registry and conduct safety inspections of these lines for "pipeline operators" in the state. The Commission also is tracking the development of pipelines in less populated areas which transport gas from non-conventional wells.

Act 127 expands the Commission's authority to enforce the federal pipeline safety laws as they relate to those pipelines and facilities. Non-public utility gas and hazardous liquids pipeline operators include several different categories of pipelines such as cooperatively owned natural gas distribution systems, non-utility natural gas transportation and gathering lines and propane distribution pipeline systems.

The Pennsylvania Public Utility Commission balances the needs of consumers and utilities to ensure safe and reliable utility service at reasonable rates; protect the public interest; educate consumers to make independent and informed utility choices; further economic development; and foster new technologies and competitive markets in an environmentally sound manner. For recent news releases, audio of select Commission proceedings or more information about the PUC, visit the PUC's website at [www.puc.state.pa.us](http://www.puc.state.pa.us).

Docket No. M-2012-2282031

**Source:** PUC Press Release, 5/24/2012

### **Act 13 Implementation Order Available**

The Public Utility Commission's Act 13 Implementation Order - Implementation of Unconventional Gas Well Impact Fee Act - has been published in the Pennsylvania Bulletin. The Commission has issued this Implementation Order Regarding Chapter 23 in order to outline the key portions of that chapter that this agency is required to administer and to provide guidance on how those provisions will be implemented.

While this order addresses the key issues necessary for implementation of Chapter 23 of Act 13, we recognize that there are other issues not presently addressed or that may arise and require resolution in the future. Accordingly, if there are additional issues that should be

addressed, commentators may, by May 30, 2012, identify these issues and propose resolutions for our consideration and disposition in a supplemental implementation order.

However, due to uncertainty surrounding the pending litigation, the Commission will not address the provisions of Chapter 33 of Act 13 at this time.

A copy of the implementation order may be viewed at: <http://www.pabulletin.com/secure/data/vol42/42-21/998.html>

**Source:** PA Bulletin, 5/25/2012

**Source:** PA Environmental Digest, 7/16/2012

### **Mundy Introduces bill to Strengthen Environmental Safeguards in Shale Law**

On May 24, 2012, state Rep. Phyllis Mundy introduced a bill that would establish stronger environmental protections in Act 13 of 2012, the Marcellus Shale law recently signed by Gov. Tom Corbett, and would improve transparency and public accountability in natural gas drilling activities. "The Corbett Marcellus Shale law fails to adequately protect our streams, our rivers, our lakes and reservoirs and virtually every other public water source," said Mundy, D-Luzerne. "And it fails to provide oversight over the disposal and storage of potentially hazardous fracking chemicals.

"My bill would correct these failures and would put the interests of Pennsylvanians first by protecting our critical environmental resources - for today's residents and for future generations," she added.

Mundy's bill, H.B. 2416 - part of the House Democrats' Marcellus Compact legislative package - includes the following components:

- Establishes a moratorium during which wastewater from oil and gas activities could not be discharged into surface waters;
- Creates an online tracking system to report the storage, transportation, and disposal of wastewater;
- Prohibits drilling from taking place within a flood plain;

- Requires drilling companies to obtain an erosion and sediment control (E&S) permit in addition to a regular well permit; and
- Requires the Department of Environmental Protection, the Department of Conservation and Natural Resources, the Fish and Boat Commission and the Game Commission to jointly conduct a comprehensive study on the cumulative impacts of all anticipated oil and gas activities throughout the commonwealth.

"These are simple measures that we can, and should, take to make sure our water resources are kept pure and clean and to ensure the safe disposal of hazardous chemicals," Mundy said.

The Marcellus Compact is a six-bill legislative package that fixes the flawed, industry-friendly Marcellus Shale law. The Marcellus Compact is a promise by House Democrats to put the interests of Pennsylvania taxpayers, workers and families first - unlike Act 13, which Mundy called a "sweetheart deal for global multi-billion-dollar oil and gas giants."

**Source:** Rep. Mundy Press Release, 5/24/2012



### **Governor Corbett Signs Executive Order Requiring DEP to Implement Permit Decision Guarantee Program**

Governor Tom Corbett today issued Executive Order EO2012-11, which requires the Department of Environmental Protection to immediately begin assessing how best to make timely permitting decisions.

The order establishes a Permit Guarantee Program, in which DEP will strive to make permitting decisions within established processing times for complete and technically adequate applications.

"One of the biggest complaints I have received over and over again is the time it takes for businesses, non-profit organizations and local governments to work through the permitting process," Corbett said. "I promised to correct this, and today we are setting the wheels in motion to deliver on that promise. At the same time, DEP will continue its longstanding mission to protect our environment."

"While DEP will be working hard to become even more efficient, the new program also must make clear our expectations from those seeking permits. Full and complete applications are necessary for DEP to be able to make a timely decision without sacrificing their duty and commitment to protect the environment," Corbett said. "Complete applications mean DEP can make a sound decision quickly."

The order also requires DEP to coordinate the review of applications for projects with multiple permits; establish performance standards for staff engaged in permit reviews; and where possible, develop and improve electronic permitting tools.

The executive order is published on the Office of Administration's website at [www.oa.state.pa.us](http://www.oa.state.pa.us). On the left toolbar, select "Records & Directives," then "Executive Orders."

**Source:** DEP Press Release, 7/24/12

***This Legislative Update provides general information, and does not represent the views or opinions of PAEP, as to any specific matter. It should also not be used as a substitute for appropriate legal advice.***

*Erik Ross is a Senior Lobbyist with Gmerck Government Relations who specializes on issues for the Water Utility Council (WUC). For further information, contact Erik at:*

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