Group Against Smog and Pollution, Inc.
Hotline

Spring 2011 www.gasp-pgh.org

What We Can Learn From PA DEP's Marcellus Air Monitoring Studies

by Joe Osborne, GASP Legal Director

A longer version of this article appeared in GASP's blog, see: http://gasp-pgh.org/2011/02/what-we-can-learn-from-pennsylvania-deps-marcellus-air-monitoring-studies/

On January 31, the Pennsylvania Department of Environmental Protection released a study of air quality around Marcellus Shale operations in northeastern Pennsylvania.[1] Here are some typical headlines from articles on the study: "Pa. DEP study finds Marcellus air emissions OK,"[2] "DEP Says Air Near Marcellus Drilling Sites Is Safe,"[3] or even "DEP finds no health threat from Marcellus air emissions."[4]

If those headlines are accurate, why do GASP and other environmental organizations keep going on and on about the massive quantities of air pollution that result from natural gas production? Both can't be true, right? So what explains the discrepancy?

Limitations of the DEP Studies

First, as DEP acknowledges, the data collected during this study simply is not sufficient to support the bold, sweeping claims found in headlines like those I listed above. This study, as well as a similar study from southwestern Pennsylvania that DEP released last fall,[5] selected a few sites where natural gas activity was occurring and conducted air monitoring at each of these sites on no more than four days.[6] The goal was to determine if any of 44 specific pollutants DEP selected[7] were present in the atmosphere in sufficient concentrations that breathing that air for a short period (generally somewhere between one hour and 24 hours) would pose a threat to human health.[8] So already some of the studies' limitations are clear: between these two studies DEP has conducted monitoring at only eight natural gas sites, never monitored at any one site for more than four days, and ignored the risks of long-term exposure to these pollutants. Are these studies useful? Absolutely, but they don't justify a sweeping conclusion that natural gas operations pose no risk to our air.

In fairness to the journalists who reported on the DEP's study, I should also note that the majority of news stories on the DEP's studies also mention these limitations, but you have to make it most of the way through the typical article before they're mentioned. DEP also acknowledges these limitations in the executive summaries to both of these studies (though press releases and public statements are another matter, which I'll get to in a moment):

> *Due to the limited scope and duration of the sampling and the limited number of sources and facilities sampled, the findings only represent conditions at the time of the sampling and do not represent a comprehensive study of emissions. While this short-term sampling effort does not address the cumulative impact of air emissions from natural gas operations . . . the sampling results do provide basic information on the type of pollutants emitted to the atmosphere during selected phases of gas extraction operations in the Marcellus Shale formation.*[9]

continued on page 6

In this issue

Group Against Smog and Pollution, Inc. (GASP) is a nonprofit citizens group in southwestern Pennsylvania working for a healthy, sustainable environment. Founded in 1969, GASP has been a diligent watchdog, educator, litigator, and policy maker on many environmental issues, with a focus on air quality in the Pittsburgh region.

Introducing Athletes United for Healthy Air

by Jamin Bogi, GASP Education and Outreach Coordinator

Every day across America, the following simple scene plays itself out thousands of times. A young woman gets home from work and decides to run off the stress of the day. She puts on her running gear and hits the street, rushing past the traffic jams that she was just a part of minutes before. She runs to the end of her neighborhood and back, deftly dodging the sidewalk cafe tables, loosely-watched dogs, the cell-phone zombies... and the cars.

Lots and lots of cars. It makes sense to want to get your exercise in right after work, before dinner, while it's light out. Get it out of the way, and get the workday out of your mind. But running on a busy street? During rush hour? On a hot, ozone-filled day? The air quality could be damaging your body almost as much as your exercising is helping it. It sounds obvious—pollution is bad for you, so try to avoid it. But every day, I see joggers, cyclists, dog walkers—all pounding the pavement on busy, clogged roads, through clouds of particulate matter. Particulate matter that causes arrhythmia, strokes, heart attacks, and cancer. Through ozone that gives the inside of your throat and lungs something that looks like sunburn.

Never thought of it that way? You need to join Athletes United for Healthy Air, a new GASP campaign intended for everyone who is active outdoors. Athletes United provides an opportunity to learn about the effects of poor air quality on exercising individuals and, more importantly, get advice on how to reduce your exposure to air pollution without abandoning your exercise routine. Athletes United can provide you with daily air pollution forecasts, just like weather forecasts. We'll have unique outdoor events, like our Side Street Stroll series with Venture Outdoors. We'll learn from professional athletes who have asthma or allergies and have learned to deal with their conditions and succeed anyway. Ultimately, the campaign will unify those who enjoy outdoor activities, most of whom would have nothing much more in common than this: we athletes deserve clean air. And we'll unite to get it.

Check out the Athletes United page of our website's Projects area to learn more and join today.

The **Hotline** is the quarterly newsletter of the Group Against Smog and Pollution, Inc.

GASP
Wightman School Community Building
5604 Solway Street, Room 204
Pittsburgh, PA 15217

phone 412.325.7382
fax 412.325.7390

www.gasp-pgh.org
gasp@gasp-pgh.org

Printed on 100% post-consumer recycled, processed chlorine-free paper at Forward Lithography, 4065 Irvine St., Pittsburgh, PA.

GASP Mission Statement

GASP will act to obtain for the residents of southwestern Pennsylvania clean air, water, and land in order to create the healthy, sustainable environment and quality of life to which we are entitled.

Methods of Achieving Mission

GASP is a citizens' group based in Southwestern PA which focuses on Allegheny County environmental issues. When pertinent to these concerns, we participate in state and national environmental decisions.

We believe in the public's right to receive accurate and thorough information on these issues and to actively participate in the decision making process.

To achieve our environmental goals on behalf of our membership, GASP will advocate, educate, serve as an environmental watchdog, mobilize action, and litigate when necessary.

We will work both independently and in cooperation with like-minded individuals and groups as determined by the Board of Directors.

We will uphold GASP's reputation for scientific integrity, honesty, and responsible involvement.

The Radioactivity Threat from Marcellus Shale Fracking

by Ed Gerjuoy, Ph.D., Professor of Physics Emeritus, GASP Board Member

The Fall 2010 issue of *Hotline* contained a number of articles on the potential environmental hazards of Marcellus Shale fracking, the now customary term for hydraulic fracturing of the shale rock layers to release the methane and other volatile hydrocarbons locked in the shale. These articles included: "Marcellus Shale: A threat to Our Air" by Joe Osborne, GASP Legal Director; "In the Marcellus Drilling Fields" by Sue Seppi, GASP Project Manager; and "Pitt GSPH Panel Discussion on Marcellus Shale" by myself. In the months after the Fall *Hotline* issue appeared these potential environmental hazards also have been discussed in numerous newspaper articles, many very informative; see, e.g., the *New York Times* (NYT) 2/26/11 (article by Ian Urbina) and the *Pittsburgh Post-Gazette* (PPG) 3/1/11 (article by Don Hopey and Daniel Malloy). Many of these recent newspaper articles have emphasized the potential radioactivity hazards associated with the fracking wastewater, a threat which even engendered an editorial in the 3/7/11 PPG.

This article will discuss those radioactivity hazards. Space limitations prevent a full discussion, which would be quite complicated because of the following facts: (i) radioactive emissions are diverse—there are three main sorts, termed respectively alpha, beta and gamma rays; (ii) the emission energy of each of these ray types can vary widely, depending on the particular radioactive source; and (iii) the health effects of each of these ray types can be quite different, as well as highly energy dependent. Readers are referred to the aforementioned NYT and PPG articles, which are posted on those newspapers' websites, as well as to two articles posted on the GASP website, titled, respectively, "Radioactivity: A Description of its Nature, Dangers, Presence in the Marcellus Shale...," and "Radioactivity in Marcellus Shale." Also useful should be the talk by Tracy Bank in the Pitt GSPH Panel Discussion reviewed in the Fall Hotline; go to http://www.chec.pitt.edu/Archives.html#2010, p. 2.

Marcellus Shale originated about 350 million years ago, from sediments composed in part of organic matter laid down in some ancient large body of water. The radioactivity levels in the Marcellus Shale vary with location, but generally are significantly larger—in some places as much as thirty times larger—than the levels in the non-Marcellus rock formations adjoining the Marcellus. The increased levels must have resulted from special chemical conditions in the body of water wherein the Marcellus was formed, conditions that favored the solution and ultimate precipitation of compounds containing the heavier metals, which category includes the radioactive elements uranium and radium. The chemicals in the fracking fluids that are employed to break up the Marcellus seemingly also favor the drawing into solution of the heavier metals in the shale formation; the radioactivity of the fracking wastewater generally is considerably larger than the radioactivity of the Marcellus itself.

The ultimate result of these just mentioned radioactivity enhancing chemical processes is that the fracking wastewater radioactivity levels, though highly variable, typically considerably exceed federal drinking water standards, as the above cited PPG editorial pointed out. Indeed out of 179 Pennsylvania wells whose fracking wastewater was tested, 15 had radioactivity levels more than 1000 times the federal standards. These high wastewater radioactivity concentrations do not necessarily imply that the wastewater will be a health hazard as it will be diluted before entering the public water supply. These high wastewater radioactivity concentrations unquestionably do imply, however, that the law must require careful monitoring of the radioactivity in the wastewater at all stages pertinent to its possible health effects. Such required careful monitoring obviously pertains to any drinking water supply system whose intake water might have been contaminated by fracking wastewater, and might also pertain to any industrial plant whose emissions are permeating the atmosphere with very large volumes of possibly fracking contaminated water, e.g., the stack emissions from the Cheswick power plant and the coke quenching emissions at Clairton.

The term 'radioactivity' (more accurately 'natural radioactivity') denotes the fact that every atom of radium, as well as of a number of other chemical elements found in nature, eventually emits a highly energetic particle; such so-called radioactive decays—if of the alpha or beta sort, but not if of the gamma sort—convert the emitting atom into an atom of a different element. In particular it has been known for more than 100 years that radium, which decays into radon, is just one element in a chain of radioactively decaying elements, starting with uranium, the heaviest in the chain, and ending with the lightest and stable (i.e., not radioactive) element lead. It also is known that in any given time interval the probability a uranium atom will suffer a radioactive decay is very much smaller than the decay probabilities of

continued on page 4

any of the other atoms in the uranium decay chain, excepting of course the stable (non-decaying) final chain element lead. This probability is measured by the half life, defined as the time required for the decay of precisely half the atoms in any given collection of those atoms, e.g., starting with a gram of some radioactive element, the half life is the time required for the decay of precisely half a gram; evidently the longer the half life, the smaller the probability of decay in any given time interval. In particular, the half life of radium in the chain is about 1620 years and the half life of radon is only about four days, whereas the half life of uranium is more than four billion years.

These facts imply that for all practical purposes the level of radioactivity in any sample of wastewater, whether undiluted or diluted, will remain essentially constant in time; we can't store the wastewater until its radioactivity dies out. The wastewater's level of radioactivity decreases proportionately to its dilution with nonradioactive water, but—assuming there has been no chemical treatment of the sample so as to reduce its radioactivity, which treatment might selectively remove its long half life components—whatever radioactivity remains in the sample after dilution endures in the sample essentially forever. Correspondingly, even assuming a water treatment plant can manage to chemically treat its incoming wastewater-contaminated input so as to remove all the radioactivity from its drinking water output, it must be recognized that absolutely none of that radioactivity has vanished. The treatment merely has relocated the atoms of radioactive uranium, radium, etc., so that those atoms no longer will flow into household drinking water pipes; their radioactivity continues unabated and still must be dealt with.

Ultimately, therefore, the uranium and radium in the fracking wastewater will have to be brought to a landfill or some similar repository, wherein the radioactive decays from these long lived elements hopefully will not be able to harm anyone. But assuring this hope will require monitoring of the landfill boundaries, to be certain that the deposited radioactive atoms are not somehow seeping out. Furthermore, the inevitable radium decay within the landfill equally inevitably produces radon, which is a gas, thereby very likely making it necessary to also monitor the air above the landfill, especially if people are working within and/or on the landfill boundaries. Of course radon emissions into the air are most likely to be hazardous when those emissions are confined and thereby prevented from being diluted into the outdoor atmosphere. Accordingly, the EPA has set a health-based maximum allowed limit on indoor radon concentrations; correspondingly, Pennsylvania requires the seller of any residence to disclose its indoor radon concentration. Consequently it may be necessary to monitor radon concentrations in the air above any indoor swimming pool filled with the output from a water supply system whose intake might have been contaminated by fracking wastewater, especially if the pool has a lifeguard who regularly spends his workdays at the pool (radon health risks, like radioactive health risks generally, are proportional to exposure time; the indoor radon concentration limit assumes a lifetime 24 hour exposure).

The wastewater's radioactivity health threat stems primarily, though not entirely, from the possibility that the alpha particle emitters therein, e.g., uranium and radium, will be ingested. Once ingested, atoms of all heavier metals, whether radioactive or nonradioactive, can interact chemically with substances normally present in the body, thereby producing possibly harmful compounds. Each ingested heavy metal alpha-emitting atom is specially potentially hazardous, however, because—should it suffer a radioactive decay—the emitted alpha particle will deposit a huge amount of energy in a small volume of living cells in the decaying atom's immediate vicinity. Any such energy deposition will initiate a large variety of chemical reactions, most of which almost certainly will kill cells, but many of which may be expected to merely damage genetic material, i.e., to very possibly produce carcinogens.

In sum, the radioactivity in fracking wastewater need not be a health hazard, but ensuring this desired outcome probably will require extensive expensive (in both money and manpower) long-term monitoring, quite possibly for centuries in view of the long half lives of the radioactive elements released by the Marcellus fracking process. This monitoring will be in addition to any required monitoring of the wastewater to keep track of the nonradioactive heavier metals also released during fracking.

Letter to the Editor of the Post-Gazette:
People don't willingly breathe polluted air

Is local air pollution making us sick and shortening our lives? Yes, if we believe the data presented in the Post-Gazette's "Mapping Mortality" series (Dec. 12-19). However, in his letter "Key Risk Factors" (Jan. 23), epidemiologist Lewis Kuller disagrees. Dr. Kuller's letter raises questions of both fact and philosophy.

Dr. Kuller correctly points out that studies like this must account for factors like age, smoking habits and lifestyle, and implies that the PG ignored these confounding effects. Dr. Kuller asserts that air pollution-related health problems are no greater here than in the rest of the state.

It's as if Dr. Kuller failed to read the opening article of the series in which the authors describe the study's development ("Post-Gazette Developed Its Own Study and Put It on the Map"). Care was taken to avoid many of the biases Dr. Kuller identifies, including age and gender distribution as well as smoking rates. The authors drew heavily on the expertise of many of Dr. Kuller's colleagues in epidemiology at Pitt, the distinguished faculty at Carnegie Mellon University and the Pennsylvania Department of Health. These articles are not just a summary of prior work but a serious research project in their own right.

Now the philosophical issue raised by his letter: Many of us choose to take risks that are even larger than that imposed by air pollution or smoking. Some of us drink in excess at parties, free-climb mountains, ski down treacherous slopes or eat too much unhealthy food.

But none of us volunteer to breathe dirty air or welcome the health damage that results. None of us would purposely expose our children to unhealthy air and increase the risk they will become asthmatic. We all look forward to a day when our air quality will meet all federal health standards, something that has not happened here since these standards were created 40 years ago.

RACHEL FILIPPINI
Executive Director
Group Against Smog and Pollution
Squirrel Hil

GASP in Action

RIGHT: Dr. Jonathan Weinkle speaks in support of Pittsburgh's clean construction legislation at a press conference organized by GASP, Clean Water Action, and Pittsburgh United on Feb. 17, 2011. Photo by Jamin Bogi.

LEFT: GASP staff and board members recently met with environmentalists from Kazakhstan to discuss grassroots involvement in environmental issues; environmental regulation and monitoring; and air pollution. GlobalPittsburgh arranged the visit.

From left to right: Asel Sagyndykovna Tokzhanova, Maren Cooke, Rachel Filippini, Jamin Bogi, Michael Piterman, Yekaterina Georgiyevna Strikeleva, Bolat Dalabayevich Beldevekov, Aliya Altayevna Sadvokasova, Nargul Yesmukhanovna Zhabasova. Photo by Tim Allen.

PA DEP's Marcellus Air Monitoring Studies continued from page 1

There are also problems with these studies that DEP does not acknowledge.

For around a dozen of the 44 pollutants DEP looked at, pollutant concentration data was provided only by an air monitoring instrument called an FTIR. The FTIR monitor detects pollutants by shooting an infrared beam through the open air at the site where monitoring is occurring. The beam bounces off a carefully placed reflector and travels back to the monitor to be analyzed. However, as the DEP studies note, a "tradeoff exists between the length of the open path and detection limits; the longer the path, the higher the detection limits."[10] In other words, the longer the beam, the higher the pollution levels in the air must be before the monitor can detect them. Any pollution concentrations lower than the detection limit essentially register as zero.

For instance, the pollutant nitrogen dioxide (NO_2) is associated with respiratory problems and can transform into dangerous ozone or particle pollution in the atmosphere. Compressor stations are by far the largest source of NO_2 associated with natural gas production, but amazingly, DEP detected absolutely no NO_2 near a compressor station in DEP's northeastern PA study. How can that be? It's because the FTIR's minimum detection limit was far too high to detect NO_2 at concentrations ever realistically found in the atmosphere.

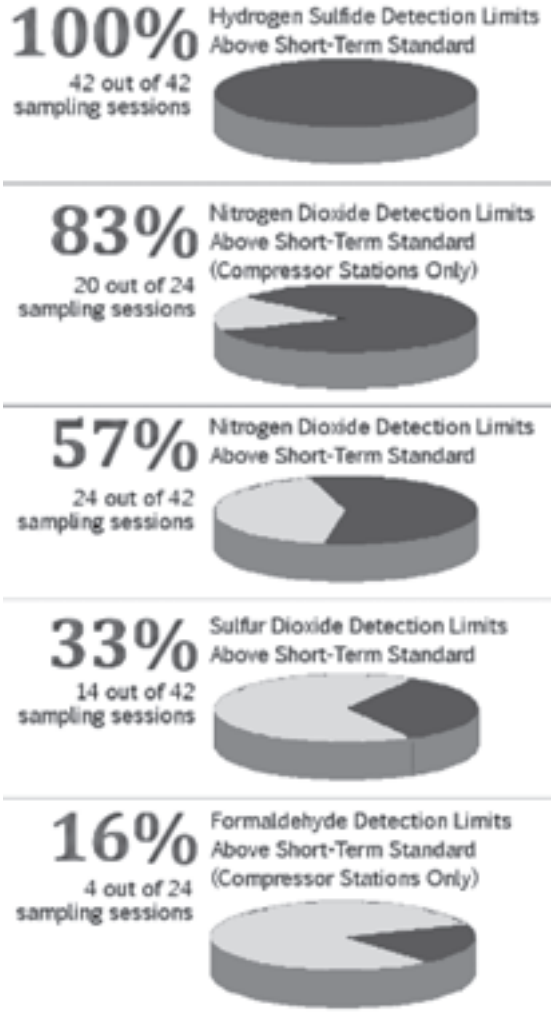
DEP listed its FTIR detection limits in the appendices to each study. These limits changed with each 7-hour monitoring period due to variations in equipment placement and environmental conditions. During compressor station monitoring for the northeastern PA study, during its most sensitive monitoring session, the FTIR was only capable of detecting NO_2 at concentrations of 198 parts per billion (ppb) and above.[11]

To put that 198 ppb figure in perspective, consider that as I write this, the highest hourly average NO_2 concentration recorded in Allegheny County in the last 48 hours was 42 ppb, as of 2007, the annual average statewide NO_2 concentration was right around 11 ppb, and the federal health-based standard for one hour of exposure to NO_2 is 100 ppb.

So, on their best monitoring day at a northeastern Pennsylvania compressor station, DEP was incapable of detecting NO_2 unless those concentrations were 18 times the typical concentrations we see statewide, nearly 5 times the highest hourly concentration we've seen in Allegheny County in the past 48 hours, and double the short-term health-based standard. That means not just that NO_2 may have been elevated near these compressor stations, but that it would have to be sufficiently elevated to be nearly double the short-term health standard before DEP's monitoring would even detect it.

And keep in mind, that was by far DEP's best NO_2 detection limit at a northeastern PA compressor station. Their next lowest is 434 ppb, followed by 448 ppb, 985 ppb, 1015 ppb, and 1041 ppb.[12]

DEP's monitoring for hydrogren sulfide (H_2S) provides an even more drastic example. Hydrogen sulfide is a potent neurotoxin often associated with natural gas operations. Like NO_2, elevated concentrations of H_2S are likely to be present near natural gas operations, but DEP never detected this pollutant during either study. Between the southwestern and northeastern studies, the best detection limit DEP ever achieved during a monitoring session was 2528 micrograms per cubic meter ($\mu g/m^3$).[13] The worst was 35,950 $\mu g/m^3$.[14] According to the DEP studies, the maximum safe H_2S concentration for short-term exposure is 42 $\mu g/m^3$.[15] On its best monitoring day, DEP would have been unable to detect hydrogen sulfide unless it was present in concentrations 60 times the maximum safe short-term exposure concentration DEP cites.



And the problem isn't limited to H_2S and NO_2 (see charts at left). In both the southwestern and northeastern air studies, formaldehyde and sulfur dioxide minimum detection limits also routinely exceeded the short-term health standard. In DEP's press release announcing the publication of the northeastern Pennsylvania Marcellus Study, the agency states, "DEP's air sampling did not find concentrations of any compound that would likely trigger air-related health issues associated with Marcellus Shale drilling activities."[16]

What DEP says is technically true, but one would naturally assume DEP "did not find" unhealthy concentrations because unhealthy concentrations were not present. For

some pollutants, the only reason DEP did not find unhealthy concentrations may be because DEP's monitors were incapable of detecting them unless they were present at concentrations many times greater than those risk levels. Given the minimum detection limit problem, for some pollutants these studies simply don't provide enough information to conclude the air is safe.

Finally, a central purpose of these studies is to extrapolate from these monitoring sessions to get an idea of what ambient air quality looks like around natural gas operations statewide. These studies have the most predictive power if the activities and equipment at the natural gas sites where sampling occurred were operating normally during the sampling period.

Is there any reason to think these sites weren't operating as normal? DEP's air sampling vehicles, called "mobile analytical units" or MAUs, aren't exactly inconspicuous. These are large, gleaming-white vehicles with DEP logos and the words "mobile analytical unit" boldly printed on their sides. MAU-1, a heavily modified Winnebago, looks particularly billboard-like.

For all I know, operations did not change at all at the natural gas sites when the MAUs were present, but these vehicles are hard to miss, and after spotting them rolling up to the site, it would only be sensible for a gas field worker to double check that all equipment is operating properly, hatches are closed on storage tanks, etc. If a gas producer were particularly worried about air emissions from their operations, they might even go so far as to cut back production until the MAU leaves, taking its air monitors and infrared cameras along with it.

I see two potential ways to mitigate this problem. First, make the MAUs less conspicuous. Second, after conducting monitoring, PADEP should exercise its authority under the Pennsylvania Air Pollution Control Act Sections 4(3) & (4) to obtain production and operational records from every site where sampling is performed. If DEP obtains records covering the sampling period and a reasonable period before and after sampling, the Department will be better equipped to judge whether sampling sites were operating under normal conditions while air monitoring was occurring, and the public would have more confidence the air monitoring results are accurate.

Conclusion

For those pollutants unaffected by the minimum detection limit problem, we can take some comfort in DEP's sampling results, but they tell us little about the risks posed by long-term, chronic exposure. Further, the measured pollutant concentrations are only reliable to the extent the eight natural gas sites are representative of routine operation at all PA natural gas sites. Given how conspicuous the DEP's mobile analytical units are, these facilities may have operated with extra care while the MAUs were present—the air pollution equivalent of highway drivers tapping their brakes when they spot a police car on the side of the road.

Finally, as DEP acknowledges, we also can't rely on these studies to estimate the cumulative impact of emissions from natural gas operations. Large portions of Pennsylvania already fail to meet federal health-based standards for ozone and particulate matter. If air emissions from natural gas operations in the Marcellus aren't controlled, this industry has the potential to make our existing problems far worse.

While I stand by my criticism of DEP's air sampling, I do see value in the Department's studies—as imperfect as they may be. DEP's air sampling studies are an excellent start to a better understanding of the exact nature of the potential air pollution threat this industry poses. In the next few years I hope we see additional air monitoring performed by environmental organizations, academics, and additional studies by DEP. Future air monitoring efforts can benefit by looking at the DEP Marcellus Shale air studies performed to date, building on what worked well, and correcting what did not.

In the meantime, the difference between the actual study data and the way these studies were portrayed in the media emphasize the importance of critically evaluating information we come across about this fast-growing industry. The newspaper headlines characterizing these DEP's monitoring efforts as proof Marcellus-related air emissions are "OK" or "safe" or "no health threat" are reaching conclusions the DEP's data simply doesn't justify. These DEP studies are not the final word on air emissions from Marcellus Shale activity; they're part of a long a conversation that's just getting started.

1. http://www.dep.state.pa.us/dep/deputate/airwaste/aq/aqm/docs/Marcellus_NE_01-12-11.pdf [hereinafter DEP NE Report]
2. http://www.wayneindependent.com/newsnow/x896127428/Pa-DEP-study-finds-Marcellus-air-emissions-OK
3. http://www.wbng.com/news/local/DEP-Says-Air-Near-Marcellus-Drilling-Sites-Is-Safe-114951289.html
4. http://thetimes-tribune.com/news/dep-finds-no-health-threat-frommarcellus-air-emissions-1.1098111
5. http://www.dep.state.pa.us/dep/deputate/airwaste/aq/aqm/docs/Marcellus_SW_11-01-10.pdf [hereinafter DEP SW Report]
6. DEP NE Report, *supra* note 1, Appendices A & B; DEP SW Report, supra note 6, Appendices A & B.
7. DEP NE Report, *supra* note 1, at 6; DEP SW Report, supra note 6, at 6.
8. DEP NE Report, *supra* note 1, at 18; DEP SW Report, supra note 6, at 17.
9. DEP NE Report at ii; DEP SW Report at ii.
10. DEP NE Report at 5; DEP SW Report at 5.
11. DEP NE Report at 29.
12. *Id.* at 29-30
13. *Id.* at 36.
14. *Id.* at 34.
15. PADEP NE Report, Appendix C; PADEP SW Report, Appendix C.
16. http://www.portal.state.pa.us/portal/server.pt/community/newsroom/14287?id=16139&typeid=1

The Clairton Saga and the Limits of Local Control

by James Longhurst, Ph.D.

This is the last in a series of articles by James Longhurst. Dr. Longhurst, a former member of the GASP Board of Directors, received his Ph.D. from CMU and is an Assistant Professor of History at UW-La Crosse. His book on the history of air pollution politics in Pittsburgh, Citizen Environmentalists*, is now available from the University Press of New England.*

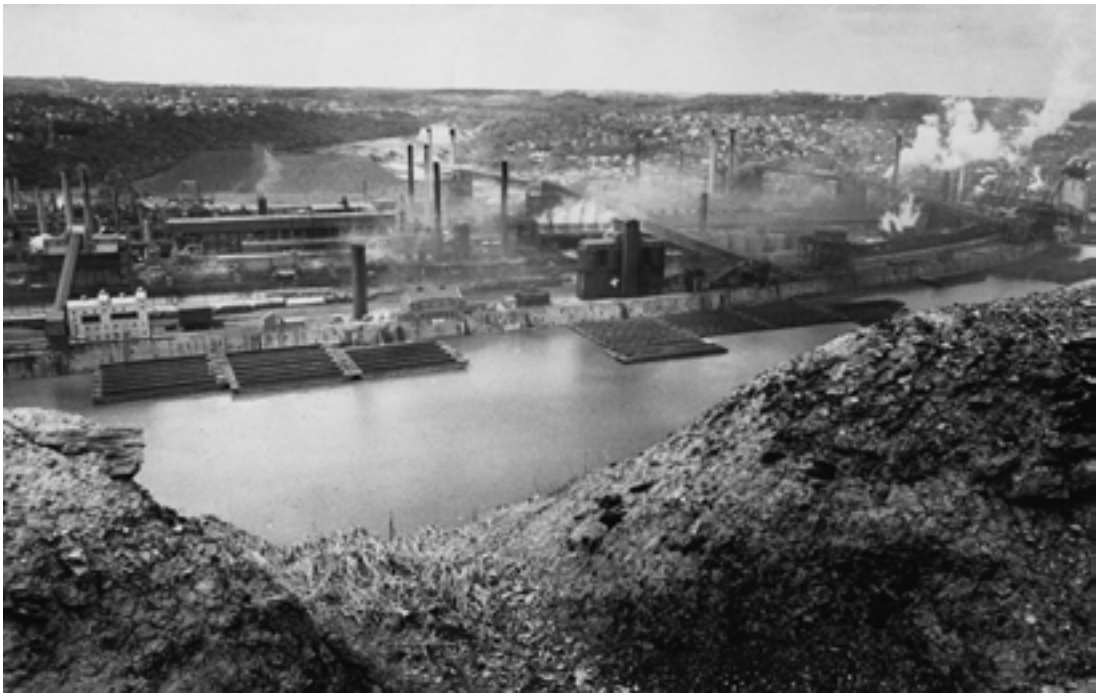
In eight articles over the last two years, I have briefly summarized the early history of GASP. This is the last article in the series, reflecting the end of a story I explored in my research. But it is certainly not the end of the story of GASP, nor of Pittsburgh.

The late-1960s origins of GASP were related to an experiment. This experiment included the creation of an exceptionally strong county air pollution control code coupled with a sort of a safety valve - a local "variance" board equipped with the ability to negotiate concessions, hear complaints from the public, and levy fines or recommend legal sanctions. GASP was formed to influence that original code, and a great deal of its early activity revolved around oversight of the Variance Board's activities. The goal of the experiment was to have local control of a collaborative, negotiable regulatory process. The proposal was unique in Pennsylvania, because Pittsburgh was unique in its problems.

The first years of the Variance Board can be judged a political and functional success. In general it enforced the new code, albeit with a great deal of flexibility. GASP's involvement guaranteed that the public was included, and continuous reporting in the local press demonstrated to a dissatisfied populace that some form of action was being taken.

But the Variance Board's increasingly poor relationship with major industry in Pittsburgh demonstrates the difficulties inherent in the new experiment. The problem of regulating the complex and dirty coke-making process of the region's largest employers developed into a full-fledged saga. While many industrial sites were involved in this struggle, no situation rose to the prominence as the intractable problem of regulating U.S. Steel's Clairton Coke Works.

What eventually devolved into the Clairton saga began simply. While the new county code regulated air pollutants released from dumping water to cool hot coke (or coal baked to remove impurities for use in steelmaking), the Clairton works did not substantially alter its practices. Repeated hearings before the Variance Board in 1970 and 1971 went nowhere. Stumped by the magnitude of the problem - closing Clairton was within their power, but a political non-starter - the board eventually recommended that U.S. Steel be taken to court to force compliance.



The Clairton Coke Works—often called the nation's largest—sprawls along the river in this photo from 1976.

In the Allegheny County Court of Common Pleas, the county and city teamed up with the state DEP to attempt to negotiate a consent decree - an agreement allowing variance from county law, enforced by the court, and predicated on finding consensus between U.S. Steel and the regulators. It was a hugely complex issue, and GASP provided extensive technical assistance to the court. The negotiations resulted in a widely popular cooperative agreement, signed by county commissioners

continued on page 9

and the company in 1972, and praised nationwide as a meaningful step forward in solving the problem of pollution while protecting industry.

But U.S. Steel immediately began violating the agreement in 1973, eventually arguing that the requirements they had previously agreed to were, in fact, impossible to meet. What followed over the next three years included millions of dollars in unpaid fines, multiple failed consent decrees, jockeying between courts, accusations of bias, appeals to the Commonwealth Court, apologies from EPA administrators, constant media battles and escalation to federal courts. The struggle eroded any sense of cooperation or trust between the public, government agencies, and industry. The Post-Gazette wrote in 1971 that the Variance Board "criticized U.S. Steel for displaying an 'attitude of corporate irresponsibility.'" In the article, unnamed board members characterized the corporation's attitude as "we will not spend money to clean the environment; we will only spend money to bring ourselves into compliance with the law." By late 1973, Michelle Madoff was calling for "jail sentences for those who commit crimes in the board rooms of U.S. Steel." Never at a loss for words, Madoff later called the company "a retarded giant" and a "gigantic corporate delinquent." But it was the regulators themselves who used the most damning language. When the state DER spoke to the Pittsburgh Press in 1973, its legal counsel provided an explication of what GASP called U.S. Steel's "public-be-damned" attitude: "[Marvin] Fein said the company has shown a complete lack of good faith in the cleanup effort of Clairton and accused the steel firm of a callous disregard for the health and welfare of Clairton area residents."

An EPA administrator ducks into a car after a controversial visit to the Clairton Coke Works in 1972.

A Common Pleas Court Judge, Silvestri Silvestri, touring the Clairton Coke Works in April 1973 as a part of a long court case regarding enforcement of the county air pollution code.

The hope of 1972 was entirely dashed by 1976. The Clairton saga soured the relationship between regulators and regulated in Pittsburgh, and took what was a hopeful experiment and turned it into a legal farce. By 1976, U.S. Steel was still operating in violation of local law, but no enforcement of that law seemed possible. Most importantly, a completely new consent decree was negotiated behind closed doors in 1976, without GASP and without any other representative of the public.

While there was considerable success at the federal level enforcing regulation on Clairton after 1976, the experiment in local control had met its limits. This is not to say that the Variance Board, and the process of public oversight, was not successful in limiting pollution in Pittsburgh from other sources. It clearly was. But there were limits to that success, and the Clairton saga clearly drew the line. Regulating pollution would turn out to be much more divisive, slow, and litigious than many had originally hoped, with incremental gains spread over decades. The Clairton saga, and the larger difficulties it embodies, continues to this day. The good news is that GASP continued its role of oversight throughout. While the promise of an easy victory was dashed, the volunteers of GASP demonstrated through the last 40 years that they were dedicated enough to stay through losses, challenges, and victories both big and small. Clairton is still here - but so is GASP.

Whoosh! GASP Breezes into Children's Museum

by Lara Nagle, GASP Intern

WHOOSH! It's all about air! That's what we've been saying at GASP for years. The Children's Museum of Pittsburgh agrees, and is hosting a traveling exhibit exploring the qualities of air and air-related themes. Kids can test their own parachute designs, enter the Whirlwind Room for twisty blasts, or play with and learn from many other activities. GASP sends a giant ***thank you*** to the Children's Museum for allowing us to collaborate with them on this wonderful exhibit.

GASP will explain the relationship between air and pollution as part of this exhibit through a variety of engaging activities, including a visit to the "LabAIRatory," where kids can learn about pollution sources and how pollution moves through the air via hands on experimentation.

In addition, children can test their knowledge at a mix-and-match game identifying friends and foes of pollution, create a clean air message for local leaders, and read about how the Magic School Bus crew retrofits its trusty yellow friend.

GASP spent two Saturday afternoons at the Children's Museum in March and April and will be there again on Saturday, May 28, noon-3pm. Please bring the little ones to experience the many qualities of air and our relationship with it. Volunteers also invited to help out.

Visit the Temporary Exhibits page of www.pittsburghkids.org for more information about "WHOOSH! It's all about air!"

Catch GASP at These Upcoming Events

Friday, Saturday, and Sunday, April 8th, 9th, and 10th -- **Banff Film Festival**. www.ventureoutdoors.org

Saturday, April 9th -- **Side Street Stroll**, 1-5 PM. Courtesy of GASP's Athletes United for a Healthy Air campaign and Venture Outdoors. Register at www.ventureoutdoors.org

Saturday, April 16th -- **Party for the Planet at Pittsburgh Zoo**, 11-3 PM. www.pittsburghzoo.org

Saturday, April 30th -- **Earth Day Fair in Verona** 10-4 PM. www.veronaec.org

Saturday, April 30th -- **Earth Day Fair at 10,000 Villages** in Squirrel Hill (10:30-1 PM or 2-5 PM). pittsburgh.tenthousandvillages.com

Saturday, May 21st -- **Venture Outdoors Festival** for Great Outdoors Week, 11-6 PM. www.ventureoutdoors.org

Sunday, May 22nd -- **Girls on the Run 5K**, 8:30am-11am. www.gotrmagee.org

Saturday, May 28th -- **Children's Museum**, Whoosh exhibit, 12-3pm. www.pittsburghkids.org

Saturday, June 11th -- **Side Street Stroll**, 1-5 PM. Courtesy of GASP's Athletes United for a Healthy Air campaign and Venture Outdoors. Register at www.ventureoutdoors.org

Saturday, August 13th -- **Side Street Stroll**, 1-5 PM. Courtesy of GASP's Athletes United for a Healthy Air campaign and Venture Outdoors. Register at www.ventureoutdoors.org

Spotlight on a GASP Intern

GASP is happy to have a new intern, Lara Nagle, who is a fellow with the Student Conservation Association (SCA). The SCA is a national program that coordinates internships with the National Park Service and other employers working on conservation issues. This particular internship is part of the SCA's Green Cities Program, which partners college graduates with sustainable groups in Pittsburgh for a yearlong fellowship.

Lara climbing a ladder at the Carrie Blast Furnace site in Rankin, PA.

Lara recently completed an Environmental Studies degree at Oberlin College in Ohio. While there, she was involved with student groups interested in re-use education and outreach, cooperative living, campus recycling, and urban agriculture.

After graduating, Lara decided to return to her hometown, taking a more active interest in area environmental organizations and seeking work related to her field of study. She was already somewhat familiar with GASP from hearing about us from her dad over the years. When asked about her work experience thus far, she responded, "Three weeks in, I've had the wonderful pleasure of accompanying Jamin Bogi, a most excellent Education/Outreach Coordinator, on meeting and presentation errands to learn of GASP's partnerships and begin to get a sense of GASP's potential in the classroom and beyond." "As a result, I'm assisting with head and leg work for various educational presentations, developing and organizing materials for these presentations, and doing general research (both for myself and for the programs) to enhance understanding about GASP projects."Working with GASP is Lara's third job placement through the SCA. She previously worked in Cloudcroft, NM with the US Forest Service, conducting wildlife research. In Connellsville, PA, she conducted community and business service projects for the Trail Town Program in communities along the Great Allegheny Passage bike trail that runs from McKeesport to Cumberland, MD.

Lara hopes to continue her sustainability learning about green building, energy auditing, and non-profit grant writing, while gaining employment experience with "some dynamite organizations, one of which is GASP." She has also done volunteer work in Pittsburgh's parks, for Phipps Conservatory, and for GrowPittsburgh and the Thomas Merton Center. Outside of work and volunteering, Lara enjoys outdoor gardening and "all things outdoors!" She takes long walks and runs, explores new natural environments, crafts with re-used materials, and reads unusual stories in the news. She says, "Ideally I get to re-discover how charmingly odd the world is each and every day." Apropos of that, she "once got a rock trophy for Best Female Bowman at camp."

Welcome aboard, Lara!

Join GASP Today!

- ❑ $40 Grassroots Supporters ($15 low income/student rate)
- ❑ $60 Grassroots Contributors *(includes recycled tote)*
- ❑ $100 Grassroots Patrons *(includes recycled tote)*
- ❑ $250 Clean Air Defenders *(includes recycled tote)*
- ❑ $500 Clean Air Protectors *(includes recycled tote)*
- ❑ $ ___ Other

Call GASP at (412) 325-7382 to learn about automatic monthly giving, deducted directly from your checking account or charged to your credit card. An easy, hassle-free way to support GASP all year round!

Name _____

Address _____

City/State/Zip _____

Phone _____

E-mail _____

❑ I want my entire donation to go to GASP. Please don't send the recycled tote.

❑ Check ❑ Visa ❑ Mastercard ❑ American Express

Card # _____

Exp. Date _____ Amount $ _____

Signature _____

All contributions are tax-deductible to the extent allowed by law. Group Against Smog and Pollution, Inc. is a 501(c)(3) nonprofit organization. The official registration and financial information of GASP may be obtained from the Department of State by calling 1-800-732-0999. Registration does not imply endorsement.

GASP ONLINE

If you haven't seen GASP's new website yet, check it out! **www.gasp-pgh.org**

Even if you have seen it, come back for another visit! You'll see new updates regularly.

Opt In to Our Online Newsletter

In order to conserve paper and reduce printing and postage costs, we encourage our readers to subscribe to our online newsletter and opt-out of a mailed copy. To do so, use your preferred email account to send your name and the street address where you receive this newsletter to the editor at **hotline@gasp-pgh.org**. Put "hotline" in the subject line. Thank you!

Follow GASP on Twitter!
http://twitter.com/GASPPgh

Find us on Facebook!
Our name is "GASP"

Group Against Smog and Pollution, Inc.
Wightman School Community Building
5604 Solway Street, Room 204
Pittsburgh, PA 15217

RETURN SERVICE REQUESTED

NON-PROFIT ORG.
U.S. POSTAGE
PAID
PITTSBURGH, PA
PERMIT NO. 712