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Suggested Revisions to the Environmental Protection Performance Standards at Oil and Gas Well Sites (Chapter 78 and 78a)

A Rational Public Policy for the Continued

Development of Natural Gas in Pennsylvania

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Introduction: The first priority of government is to protect its citizens; all other functions being derivative of, subordinate to or ancillary to that priority. An important, albeit secondary, function is to promote economic development of within the Commonwealth. The rapid development of high volume, slick water, hydraulic fracturing to extract natural gas from the Marcellus Shale in Pennsylvania has brought substantial and rapid economic growth to a fortunate few, while spreading the long term costs across the larger society.

A balance between public protection and economic development is not being met under the existing regulation regime. The record of environmental insults continues to expand. Crucial policy components are either missing or not fully developed, including in-place methods to handle the industrial wastes, a peer reviewed risk assessment of long term impacts to public health, and a reasonable compensation to the public. It is only through taxes, fees and enforcement, along with the political will to revoke the corporate charters of offenders, that the state can control the natural gas industry and bring its benefits to those citizens for whom state governments were formed.

PADEP's current policies are inadequate to prevent the continued environmental, social and public health costs necessarily occasioned by this massive industrial development unless other, more robust and critical foundational structures are instituted:

- State-controlled facilities to process the industrial wastes (drill cuttings and flow-back)

- Cradle to Grave Financial Responsibility and Third Party Insurance
- Site restoration fund
- The political will to revoke the corporate charters of repeat offenders (not just to fine them).
- Public auctions of drilling permits
- State installation, inspection and control of metered wellheads and pipelines
- Micro-particle additives to identify each company's fracking fluids
- Secondary containment impoundments at the well head
- Prohibition of flaring
- Sufficient personnel to strictly enforce state and federal regulation.
- Investigative task force

PADEP should take physical possession of Drill Bore Cuttings and Flowback contaminants: Both drill cuttings and flowback contain dissolved solids, salts, heavy metals and radioactive elements absorbed at depth. Current regulations leave it to the drillers to dispose of these waste products. This sets up a perfect storm scenario for illegal dumping by third party hauling sub-contractors, while leaving the producing gas company in a position of plausible deniability. Because the natural gas industry is self-reporting, there are no reliable and verifiable methods to quantify how much dumping is occurring. Transport to out of state landfills simply makes it some other public's future headache. To solve this dilemma, Pennsylvania should take physical possession of these hazardous wastes and build plants to process and properly contain the end products. To compensate for the costs of processing and storage, the state should collect a per-gallon or per cubic yard fee collected at the well head. Since the gas company will already have then paid to dispose of these wastes, the incentive for illegal dumping would be greatly reduced.

Cradle-to- Grave Financial Responsibility and Third Party Insurance: Groundwater contamination associated with hydraulic fracturing have been dramatically demonstrated in both Susquehanna and Bradford Counties of Pennsylvania. This is an inevitable and predictable cost of extracting fossil fuels.

Just as vehicle drivers are required to have insurance, so too should every well developer. If natural gas extraction using high volume, slick water, hydraulic fracturing were as safe as the industry claims, then the premiums should be as insignificant as the risk potential it represents, a risk which the public is now being forced to absorb. New York State has chosen to reject fracking even though its revised SGEIS estimated the probability that groundwater contamination due to wellbore failure was estimated at $2x10^{-8}$, or one in fifty million. If Pennsylvania's insurance industry believes that figure, the premium for a liability policy for $200,000,000 should be little more than four dollars. That might be a reasonable starting figure for each well in restoring the environment and compensating both the State and each citizen directly harmed by any event associated with the drilling and fracking of the well and the disposal of its byproducts.

Site restoration fund: The only financial security now required for the costs of closing and capping a well is a fee. With well pads, access roads, pipelines, quarries and support facilities added, as many as 30 acres may be disturbed for each well. Each drill pad requires that all trees and topsoil be removed, and four to twelve feet of crushed rock trucked in. The compacted crushed stone base will prevent the reemergence of standing forests. The ground should eventually be restored to its original topography and vegetation, but when that time arrives, the original company may be long since bankrupt. The cost of what it would take in today's dollars for complete restoration should be fronted by the drilling company and sequestered in fund in the same manner as cemetery association fees.

Charter revocation: Just as drivers' licenses can be revoked for serious infractions, so too, a point system of offenses should be structured for the gas industry, such that repeated environmental failures or fraudulent conduct is cause for the State to revoke the charter of an offending company.

Auction off the drilling permits: Drilling permits are issued for a nominal fee based on depth. The free market system should determine the actual commercial value of a permit by an annual auction for a limited number of wells; that number to be determined by how many can be monitored by continuous onsite monitoring by qualified PADEP personnel, three shifts a day, 365 days per year.

Metered Wellheads/Severance Tax: When you fill your car, every gallon of gasoline is metered and taxed. So too, it should be with the natural gas industry. To compensate for consumption of the state's resources and the degradation of public water, roads, air and health, a severance tax should be assessed on each thousand cubic feet of gas that comes out of the well head. That tax should be substantially higher for any gas that is piped or shipped out of state. This can be controlled with state meters on the gathering lines. This tax should not impact leased landowners, as royalty payments are calculated on the net profits (after drilling and piping costs are subtracted).

Identifiable Fracking Fluids: When either a surface or subsurface accident (event) occurs in an area being fracked by more than one company, without identifiable additives in the fracking fluid, delays in immediate intervention will result, along with cross finger pointing and endless lawsuits to contest liability. Identifiable micro-particles imprinted with and correlated to a database of each well's API number could be added to each "frac" job. Recovery of any these particles would be prima-facie evidence of pollution from that well and invoke forfeiture of the face amount of the insurance policy.

Secondary Containment impoundments: Blowouts may be rare, but predictable events. They may eject tens of thousands of gallons of fracking fluid onto the surface. Uncontained, these releases result in severe environmental damage. Well pads should be constructed with the same secondary containments requirements for aboveground petroleum storage tanks. With impervious bottoms and surrounded by a containment moat, these catastrophes could be mitigated.

Flaring prohibited: Flaring is burning off of the initial surge of methane from the well. This first gas is contaminated by flowback water, dissolved heavy metals, salts and naturally occurring radioactive material. Capture and cleaning of this gas is a less profitable, but environmentally responsible alternative.

Investigative Task Force: The vast amount of money involved in developing this resource when coupled with secondary and tertiary contract arrangements,

and remote oversight by PADEP, creates a prime scenario for illegal activities. These include not only the obvious - improper disposal of fracking fluids and drill cuttings, but also many other penal law offenses relating to bribery and Federal RICO activities. A task force should be appointed by the Governor to include a special prosecutor backed by State Police investigators, PADEP officers, forensic accounting and computer data mining specialists.

Impacts to public resources: Mining natural gas from the Marcellus Shale will comes at a real cost to every taxpayer by degrading public water, public air, public roads, public lands and public health. That same public again pays out of pocket for the use of that gas, only when it is not more profitably exported to national and international markets. Under current policy, approximately 1/8th of the profits (less transport costs) are retained by the landowner while 7/8ths of the profits are transferred to foreign corporations chartered primarily in Texas, but often incorporated in Delaware. The general public is an unwitting participant in this wholesale transfer of sovereign wealth. The redirection of those assets and their accumulation by the gas companies and their stockholders occurs primarily through two avenues: lack of tax revenue and consumption of public resources. If, as touted, the natural gas industry is bringing universal economic prosperity, why must the public be forced to suffer the consequences of its development unless the public can also participate in the benefits?

The PADEP reduces environmental damage only to the extent that current regulations can be enforced. Multiple recent examples of serious environmental impacts in Pennsylvania show that foreign natural gas corporations are willing to pay fines, but then repeat violations because:

1. There are no PADEP inspectors on site at all times.
2. It continues to be profitable for gas companies to willfully violate regulations.

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About the author: In 2010, Mr. Fischer was successful in petitioning the Environmental Quality Board of the PA. DEP to upgrade the Silver Creek Watershed, (a 21 square mile area in Susquehanna County), to Exceptional Value status. He also acted as an intervener before the PA. Public Utility Commission in opposing the Application of Laser Marcellus Gathering Company LLC., in its bid for eminent domain in Pennsylvania (Docket No. A-2010-2153371). Mr. Fischer served both with the United States Marine Corps and the New York State Police.