

Drilling Down

Regulation Lax as Gas Wells' Tainted Water Hits Rivers

Articles in this series will examine the risks of natural-gas drilling and efforts to regulate this rapidly growing industry.

By IAN URBINA
New York Times
February 26, 2011

Photo: Kevin Moloney
for The New York
Times



Wells for extracting natural gas, like these in Colorado, are a growing source of energy but can also pose hazards.

The American landscape is dotted with hundreds of thousands of new wells and drilling rigs, as the country scrambles to tap into this century's gold rush — for [natural gas](#).

The gas has always been there, of course, trapped deep underground in countless tiny bubbles, like frozen spills of seltzer water between thin layers of shale rock. But drilling companies have only in recent years developed techniques to unlock the enormous reserves, thought to be enough to supply the country with gas for heating buildings, generating electricity and powering vehicles for up to a hundred years.

So energy companies are clamoring to drill. And they are getting rare support from their usual sparring partners. Environmentalists say using natural gas will help slow [climate change](#) because it burns more cleanly than coal and [oil](#). Lawmakers hail the gas as a source of jobs. They also see it as a way to wean the United States from its dependency on other countries for oil.

But the relatively new drilling method — known as high-volume horizontal hydraulic fracturing, or hydrofracking — carries significant environmental risks. It involves injecting huge amounts of water, mixed with sand and chemicals, at high pressures to break up rock formations and release the gas.

With hydrofracking, a well can produce over a million gallons of wastewater that is often laced with highly corrosive salts, carcinogens like benzene and radioactive elements like radium, all of which

can occur naturally thousands of feet underground. Other carcinogenic materials can be added to the wastewater by the chemicals used in the hydrofracking itself.

While the existence of the toxic wastes has been reported, thousands of internal documents obtained by The New York Times from the [Environmental Protection Agency](#), state regulators and drillers show that the [dangers](#) to the environment and health are greater than previously understood.

The documents reveal that the wastewater, which is sometimes hauled to sewage plants not designed to treat it and then discharged into rivers that supply drinking water, contains radioactivity at levels higher than previously known, and far higher than the level that federal regulators say is safe for these treatment plants to handle.

Other documents and interviews show that many E.P.A. scientists are alarmed, warning that the drilling waste is a threat to drinking water in Pennsylvania. Their concern is based partly on a 2009 study, never made public, written by an E.P.A. consultant who concluded that some sewage treatment plants were incapable of removing certain drilling waste contaminants and were probably violating the law.

The Times also found never-reported studies by the [E.P.A.](#) and a [confidential study](#) by the drilling industry that all concluded that radioactivity in drilling waste cannot be fully diluted in rivers and other waterways.

But the E.P.A. has not intervened. In fact, federal and state regulators are allowing most sewage treatment plants that accept drilling waste not to test for radioactivity. And most drinking-water intake plants downstream from those sewage treatment plants in Pennsylvania, with the blessing of regulators, have not tested for radioactivity since before 2006, even though the drilling boom began in 2008.

In other words, there is no way of guaranteeing that the drinking water taken in by all these plants is safe.

That has experts worried.

“We’re burning the furniture to heat the house,” said John H. Quigley, who left last month as secretary of Pennsylvania’s Department of Conservation and Natural Resources. “In shifting away from coal and toward natural gas, we’re trying for cleaner air, but we’re producing massive amounts of toxic wastewater with salts and naturally occurring radioactive materials, and it’s not clear we have a plan for properly handling this waste.”

The risks are particularly severe in Pennsylvania, which has seen a sharp increase in drilling, with roughly 71,000 active gas wells, up from about 36,000 in 2000. The level of radioactivity in the wastewater has sometimes been hundreds or even thousands of times the maximum allowed by the federal standard for drinking water. While people clearly do not drink drilling wastewater, the reason to use the drinking-water standard for comparison is that there is no comprehensive federal standard for what constitutes safe levels of radioactivity in drilling wastewater.

Drillers trucked at least half of this waste to public sewage treatment plants in Pennsylvania in 2008 and 2009, according to state officials. Some of it has been sent to other states, including [New York](#) and [West Virginia](#).

Yet sewage treatment plant operators say they are far less capable of removing radioactive contaminants than most other toxic substances. Indeed, most of these facilities cannot remove enough of the radioactive material to meet federal drinking-water standards before discharging the wastewater into rivers, sometimes just miles upstream from drinking-water intake plants.

In Pennsylvania, these treatment plants discharged waste into some of the state's major river basins. Greater amounts of the wastewater went to the Monongahela River, which provides drinking water to more than [800,000 people](#) in the western part of the state, including Pittsburgh, and to the Susquehanna River, which feeds into Chesapeake Bay and provides drinking water to more than six million people, including some in Harrisburg and Baltimore.

Lower amounts have been discharged into the Delaware River, which provides drinking water for more than 15 million people in Philadelphia and eastern Pennsylvania.

In [New York](#), the wastewater was sent to two plants that discharge into Southern Cayuga Lake, near Ithaca, and Owasco Outlet, near Auburn. In [West Virginia](#), a plant in Wheeling discharged gas-drilling wastewater into the Ohio River.

“Hydrofracking impacts associated with health problems as well as widespread air and water contamination have been reported in at least a dozen states,” said Walter Hang, president of Toxics Targeting, a business in Ithaca, N.Y., that compiles data on gas drilling.

Problems in Other Regions

While Pennsylvania is an extreme case, the [risks](#) posed by hydrofracking extend across the country.

There were more than 493,000 active natural-gas wells in the United States in 2009, almost double the number in 1990. Around 90 percent have used hydrofracking to get more gas flowing, according to the drilling industry.

Gas has seeped into underground drinking-water supplies in at least five states, including Colorado, Ohio, Pennsylvania, Texas and West Virginia, and residents blamed natural-gas drilling.

Air pollution caused by natural-gas drilling is a growing threat, too. Wyoming, for example, failed in 2009 to meet federal standards for air quality for the first time in its history partly because of the fumes containing benzene and toluene from roughly 27,000 wells, the vast majority drilled in the past five years.

In a sparsely populated Sublette County in Wyoming, which has some of the highest concentrations of wells, vapors reacting to sunlight have contributed to levels of ozone higher than those recorded in Houston and Los Angeles.

Industry officials say any dangerous waste from the wells is handled in compliance with state and federal laws, adding that drilling companies are recycling more wastewater now. They also say that hydrofracking is well regulated by the states and that it has been used safely for decades.

But hydrofracking technology has become more powerful and more widely used in recent years, producing far more wastewater. Some of the problems with this drilling, including its environmental impact and the challenge of disposing of waste, have been documented by ProPublica, The Associated Press and other news organizations, especially out West.

And recent incidents underscore the dangers. In late 2008, drilling and coal-mine waste released during a drought so overwhelmed the Monongahela that local officials advised people in the Pittsburgh area to drink [bottled water](#). E.P.A. officials described the incident in an internal memorandum as “one of the largest failures in U.S. history to supply clean drinking water to the public.”

In Texas, which now has about 93,000 natural-gas wells, up from around 58,000 a dozen years ago, a hospital system in six counties with some of the heaviest drilling said in 2010 that it found a 25 percent asthma rate for young children, more than three times the state rate of about 7 percent.

“It’s ruining us,” said Kelly Gant, whose 14-year-old daughter and 11-year-old son have experienced severe asthma attacks, dizzy spells and headaches since a compressor station and a gas well were set up about two years ago near her house in Bartonville, Tex. The industry and state regulators have said it is not clear what role the gas industry has played in causing such problems, since the area has had high air pollution for a while.

“I’m not an activist, an alarmist, a Democrat, environmentalist or anything like that,” Ms. Gant said. “I’m just a person who isn’t able to manage the health of my family because of all this drilling.”

And yet, for all its problems, natural gas offers some clear environmental advantages over coal, which is used more than any other fuel to generate electricity in the United States. Coal-fired power plants without updated equipment to capture pollutants are a major source of radioactive pollution. Coal mines annually produce millions of tons of toxic waste.

But the hazards [associated](#) with natural-gas production and drilling are far less understood than those associated with other fossil fuels, and the regulations have not kept pace with the natural-gas industry’s expansion.

Pennsylvania, Ground Zero

Pennsylvania, which sits atop an enormous reserve called the Marcellus Shale, has been called the Saudi Arabia of natural gas.

This rock formation, roughly the size of Greece, lies more than a mile beneath the Appalachian landscape, from Virginia to the southern half of New York. It is believed to hold enough gas to supply the country’s energy needs for heat and electricity, at current consumption rates, for more than 15 years.

Drilling companies were issued roughly 3,300 Marcellus gas-well permits in Pennsylvania last year, up from just 117 in 2007.

This has brought thousands of jobs, five-figure windfalls for residents who lease their land to the drillers and revenue for a state that has struggled with budget deficits. It has also transformed the landscape of southwestern Pennsylvania and brought heavy burdens.

Drilling derricks tower over barns, lining rural roads like feed silos. Drilling sites bustle around the clock with workers, some in yellow hazardous material suits, and 18-wheelers haul equipment, water and waste along back roads.

The rigs announce their presence with the occasional boom and quiver of underground explosions. Smelling like raw sewage mixed with gasoline, drilling-waste pits, some as large as a football field, sit close to homes.

Anywhere from 10 percent to 40 percent of the water sent down the well during hydrofracking returns to the surface, [carrying](#) drilling chemicals, very high levels of salts and, at times, naturally occurring radioactive material.

While most states require drillers to dispose of this water in underground storage wells below impermeable rock layers, Pennsylvania has [few such wells](#). It is the only state that has allowed drillers to discharge much of their waste through sewage treatment plants into rivers.

Regulators have theorized that passing drilling waste through the plants is safe because most toxic material will settle during the treatment process into a sludge that can be trucked to a landfill, and whatever toxic material remains in the wastewater will be diluted when mixed into rivers. But some plants were taking such large amounts of waste with high salt levels in 2008 that downstream utilities started complaining that the river water was eating away at their machines.

Regulators and drilling companies have said that these cases, and others, were isolated.

“The wastewater treatment plants are effective at what they’re designed to do — remove material from wastewater,” said Jamie Legenos, a spokeswoman for the Pennsylvania Department of Environmental Protection, adding that the radioactive material and the salts were being properly handled.

Overwhelmed, Underprepared

For proof that [radioactive](#) elements in drilling waste are not a concern, industry spokesmen and regulators often point to the results of wastewater tests from a 2009 draft report conducted by New York State and a [1995 report](#) by Pennsylvania that found that radioactivity in drilling waste was not a threat. These two reports were based on samples from roughly 13 gas wells in New York and 29 in Pennsylvania.

But a review by The Times of more than 30,000 pages of federal, state and company records relating to more than 200 gas wells in Pennsylvania, 40 in West Virginia and 20 public and private wastewater treatment plants offers a fuller picture of the wastewater such wells produce and the threat it poses.

Most of the information was drawn from drilling reports from the last three years, obtained by visiting regional offices throughout Pennsylvania, and from [documents](#) or databases provided by state and federal regulators in response to records requests.

Among the Times's findings:

- More than 1.3 billion gallons of wastewater was produced by Pennsylvania wells over the past three years, far more than has been previously disclosed. Most of this water — enough to cover Manhattan in three inches — was sent to treatment plants not equipped to remove many of the toxic materials in drilling waste.
- At least 12 sewage treatment plants in three states accepted gas industry wastewater and discharged waste that was only partly treated into rivers, lakes and streams.
- Of more than [179 wells](#) producing wastewater with high levels of radiation, at least 116 reported levels of radium or other radioactive materials 100 times as high as the levels set by federal drinking-water standards. At least [15 wells](#) produced wastewater carrying more than 1,000 times the amount of radioactive elements considered acceptable.

Results came from [field surveys](#) conducted by state and federal regulators, year-end reports filed by drilling companies and state-ordered tests of some public treatment plants. Most of the tests measured drilling wastewater for radium or for “gross alpha” radiation, which typically comes from radium, uranium and other elements.

Industry officials say they are not concerned.

“These low levels of radioactivity pose no threat to the public or worker safety and are more a public perception issue than a real health threat,” said James E. Grey, chief operating officer of Triana Energy.

In interviews, industry trade groups like the Marcellus Shale Coalition and Energy in Depth, as well as representatives from energy companies like Shell and [Chesapeake Energy](#), said they were producing far less wastewater because they were recycling much of it rather than disposing of it after each job.

But even with recycling, the amount of wastewater produced in Pennsylvania is expected to increase because, according to industry projections, more than 50,000 new wells are likely to be drilled over the next two decades.

The [radioactivity](#) in the wastewater is not necessarily dangerous to people who are near it. It can be blocked by thin barriers, including skin, so exposure is generally harmless.

Rather, E.P.A. and [industry researchers](#) say, the bigger danger of radioactive wastewater is its potential to contaminate drinking water or enter the food chain through fish or farming. Once radium enters a person's body, by eating, drinking or breathing, it can cause cancer and other health problems, many federal studies show.

Little Testing for Radioactivity

Under federal law, testing for radioactivity in drinking water is required only at drinking-water plants. But federal and state regulators have given nearly all drinking-water intake facilities in Pennsylvania permission to test only once every six or nine years.

The Times reviewed data from more than 65 intake plants downstream from some of the busiest drilling regions in the state. Not one has tested for radioactivity [since 2008](#), and most have not tested since at least 2005, before most of the drilling waste was being produced.

And in 2009 and 2010, public sewage treatment plants directly upstream from some of these drinking-water intake facilities [accepted](#) wastewater that contained radioactivity levels as high as [2,122 times](#) the drinking-water standard. But most sewage plants are not required to monitor for radioactive elements in the water they discharge. So there is virtually no data on such contaminants as water leaves these plants. Regulators and gas producers have repeatedly said that the waste is not a threat because it is so [diluted](#) in rivers or by treatment plants. But industry and federal research cast doubt on those statements.

A confidential industry study from 1990, conducted for the [American Petroleum Institute](#), concluded that “using conservative assumptions,” radium in drilling wastewater dumped off the Louisiana coast posed “potentially significant risks” of cancer for people who eat fish from those waters regularly.

The industry [study](#) focused on drilling industry wastewater being dumped into the Gulf of Mexico, where it would be far more diluted than in rivers. It also used estimates of radium levels far below those found in Pennsylvania’s drilling waste, according to the study’s lead author, Anne F. Meinhold, an environmental risk expert now at [NASA](#).

Other federal, state and academic studies have also found dilution problems with radioactive drilling waste.

In December 2009, these very risks led E.P.A. scientists to advise in a letter to New York that sewage treatment plants not accept drilling waste with radium levels [12 or more times](#) as high as the drinking-water standard. The Times found wastewater containing radium levels that were [hundreds of times](#) this standard. The scientists also said that the plants should never discharge radioactive contaminants at levels higher than the drinking-water standard.

In 2009, E.P.A. scientists studied the matter and also determined that certain Pennsylvania rivers were ineffective at sufficiently diluting the radium-laced drilling wastewater being [discharged into them](#).

Asked about the studies, Pennsylvania regulators said they were not aware of them.

“Concerned? I’m always concerned,” said Dave Allard, director of the Bureau of Radiation Protection. But he added that the threat of this waste is reduced because “the dilutions are so huge going through those treatment plants.”

Three months after The Times began asking questions about radioactive and other toxic material being discharged into specific rivers, state regulators placed monitors for radioactivity near where drilling waste is discharged. Data will not be available until next month, state officials said.

But the monitor in the Monongahela is placed upstream from the two public sewage treatment plants that the state says are still discharging large amounts of drilling waste into the river, leaving the [discharges](#) from these plants unchecked and Pittsburgh exposed.

Plant Operators in the Dark

In interviews, five treatment plant operators said they did not believe that the drilling wastewater posed risks to the public. Several also said they were not sure of the waste's contents because the limited information drillers provide usually goes to state officials.

“We count on state regulators to make sure that that's properly done,” said Paul McCurdy, environmental specialist at Ridgway Borough's public sewage treatment plant, in Elk County, Pa., in the northwest part of the state.

Mr. McCurdy, whose plant discharges into the Clarion River, which flows into the Ohio and Mississippi Rivers, said his plant was taking about 20,000 gallons of drilling waste per day.

Like most of the sewage treatment plant operators interviewed, Mr. McCurdy said his plant was not equipped to remove radioactive material and was not required to test for it.

Documents filed by drillers with the state, though, show that in 2009 his facility was sent water from wells whose wastewater was laced with radium at 275 times the drinking-water standard and with other types of radiation at more than 780 times the standard.

Part of the problem is that industry has outpaced regulators. “We simply can't keep up,” said one inspector with the Pennsylvania Department of Environmental Protection who was not authorized to speak to reporters. “There's just too much of the waste.”

“If we're too hard on them,” the inspector added, “the companies might just stop reporting their mistakes.”

Recently, Pennsylvania has tried to increase its oversight, doubling the number of regulators, improving well-design requirements and sharply decreasing how much drilling waste many treatment plants can accept or release. The state is considering whether to require treatment plants to begin monitoring for radioactivity in wastewater.

Even so, as of last November, 31 inspectors were keeping tabs on more than 125,000 oil and gas wells. The new regulations also allowed at least 18 plants to continue accepting the higher amounts set by their original permits.

Furthermore, environmental researchers from the [University of Pittsburgh](#) tested wastewater late last year that had been discharged by [two treatment plants](#). They say these tests will show, when the results are publicly released in March, that salt levels were far above the legal limit.

Lax Oversight

Drilling contamination is [entering the environment](#) in Pennsylvania through spills, too. In the past three years, at least 16 wells whose records showed high levels of radioactivity in their wastewater also [reported spills](#), leaks or failures of pits where hydrofracking fluid or waste is stored, according to state records.

Gas producers are generally left to police themselves when it [comes to spills](#). In Pennsylvania, regulators do not perform unannounced inspections to check for signs of spills. Gas producers report their own spills, write their own [spill response plans](#) and lead their own cleanup efforts.

A review of response plans for drilling projects at four Pennsylvania sites where there have been accidents in the past year found that these state-approved plans often appear to be in violation of the law.

At one well site where several [spills occurred](#) within a week, including one that flowed into a creek, the well's operator filed a [revised spill plan](#) saying there was little chance that waste would ever enter a waterway.

“There are business pressures” on companies to “cut corners,” John Hanger, who stepped down as secretary of the Pennsylvania Department of Environmental Protection in January, has said. “It’s cheaper to [dump](#) wastewater than to treat it.”

Records back up that assertion.

From October 2008 through October 2010, regulators were more than twice as likely to issue a written warning than to levy a fine for environmental and safety violations, according to state data. During this period, 15 companies were fined for drilling-related violations in 2008 and 2009, and the companies paid an average of about \$44,000 each year, according to state data.

This average was less than half of what some of the companies earned in profits in a day and a tiny fraction of the more than \$2 million that some of them paid annually to haul and treat the waste.

And prospects for drillers in Pennsylvania are looking brighter.

In December, the Republican governor-elect, Tom Corbett, who during his campaign took more gas industry contributions than all his competitors combined, said he would reopen state land to new drilling, reversing a decision made by his predecessor, [Edward G. Rendell](#). The change clears the way for as many as 10,000 wells on [public land](#), up from about 25 active wells today.

In arguing against a proposed gas-extraction tax on the industry, Mr. Corbett said regulation of the industry had been too aggressive.

“I will direct the Department of Environmental Protection to serve as a partner with Pennsylvania businesses, communities and local governments,” Mr. Corbett says on his Web site. “It should return to its core mission protecting the environment based on sound science.”

MORE FEATURES

Video - Natural Gas and Polluted Air -

<http://video.nytimes.com/video/2011/02/26/us/100000000650773/natgas.html?hp>

Interactive Map - Toxic Contamination from Natural Gas Wells

<http://www.nytimes.com/interactive/2011/02/27/us/natural-gas-map.html?hp>

Graphics - Extracting Natural gas from Rock

<http://www.nytimes.com/interactive/2011/02/27/us/fracking.html?hp>

Documents - Natural Gas's Toxic Waste -

<http://www.nytimes.com/interactive/2011/02/27/us/natural-gas-documents-1-intro.html?hp>

[Spreadsheet: Contaminants in Samples From More Than 200 Wells](#)
(Microsoft Excel File)

Documents: Natural Gas's Toxic Waste

Over the past nine months, The Times reviewed more than 30,000 pages of documents obtained through open records requests of state and federal agencies and by visiting various regional offices that oversee drilling in Pennsylvania. Some of the documents were leaked by state or federal officials. Here, the most significant documents are made available with annotations from The Times.

Challenges of Handling Natural Gas Waste

- [Confidential E.P.A. Draft Document](#)
- [E.P.A. Briefing on Hydrofracking](#)
- [Conference Call Between State and Federal Regulators](#)



Disposal of Natural Gas Waste

- [Internal E.P.A. Presentation](#)
- [Tracking Document for Gas Industry Wastewater](#)
- [Pennsylvania Fines Jersey Shore for Sewage Violations](#)



Contaminants in Natural Gas Wastewater

- [E.P.A. Scientist Discusses Radioactivity in Waste](#)
- [E.P.A. Draft Document for New York State](#)
- [Field Study of Radioactivity at Marcellus Shale Wells](#)



Spills and Spill Plans in Pennsylvania

- [Cabot Oil and Gas's Spill Plan](#)
- [E-mail on Suspected Illegal Dumping into Mine Void](#)
- [Federal Natural Gas Drilling Tip Line](#)



PUBLIC COMMENTS (early February 27, 2011)

[1. Checks and Balances Project](#)
Washington, DC
February 26th, 2011
7:12 pm

This report confirms what many have suspected about hydraulic fracturing: that it just too hazardous to continue in the secretive way in which the industry has been operating. In January, Congress found that diesel fuel has been illegally used in fracking fluid and pumped through our underground aquifers. Now we learn radioactive waste fracking fluid is treated unsafely in public water treatment facilities. This story grows the list of health and safety questions stemming from water contamination by the gas industry. If this is what we find out from an industry that won't report its basic activities, imagine what secrets are still out there.

I just returned from investigating impacts on local communities from fracking in the gas patch of western Colorado for the Checks and Balances Project, an investigative watchdog effort. While there, I met many landowners who have been subjected to the gas industry's distortions and dirty tricks because they raised questions about water contamination and public health protections in their communities.

Based on what I saw in my efforts, the New York Times should expect to see the same gas industry PR engine work hard to attack this story through distortions, questioning of motives and baseless

arguments. There's a useful recent report debunking the gas industry's top ten most repeated claims about hydraulic fracturing at DeSmogBlog.com (The Natural Gas Industry vs. Reality.)

What all indications tell us is that if the gas industry is going to play fast and loose with our water, it at least needs far greater accountability.

- Andrew Schenkel, Checks and Balances Project

[2.](#) JL

Ithaca

February 26th, 2011

7:12 pm

The fox guarding the hen house...

Never, EVER trust that a corporation will "do the right thing" regarding care of the environment. They exist to make a profit for the shareholders and executives. Period. To believe otherwise is naive in the extreme. We Americans have been far too gullible in this respect.

Thanks, NY Times for this investigative journalism. I hope this can translate into positive results before it's too late.

[3.](#) Protecting Our Waters

Delaware River watershed

February 26th, 2011

7:12 pm

This is an extremely important and timely article. Crucial scientific voices have been muted by the din created by PR firms working for the gas industry, and it's wonderful when investigative reporters take the time to amplify scientific voices of caution. Hydrogeologist Paul Rubin and Temple University's Dr. Michel Boufadel are among those warning that we must maintain a gas drilling moratorium until the risks are understood. Under current regulations, public health is already being hurt. Large corporations should not be allowed to play fast and loose with public health.

[4.](#) abe

Philadelphia, PA

February 26th, 2011

7:12 pm

Nice piece here. Unconventional shale gas drilling is the greatest environmental threat of our time. Pennsylvania allowed the natural gas industry to come in and start drilling with minimal regulation, no severance tax, and absent any environmental impact study. Nevertheless there have been thousands of DEP violations in just a few years. The dumping of produced flowback water in rivers is just another indication that we're dealing with a reckless industry. This activity needs to be stopped until there are cumulative impact studies proving it can be done safely (without harming clean water and pure air). David Caruso of AP initially broke this story about a month ago.

[5. wangxu](#)
Guangzhou, CHINA
February 26th, 2011
7:14 pm

In US, Environmental Organizations and Press can and dare to boycott the drilling with potential environmental contamination, and it does work, the relative federal and state governments will consider these proposals, and the oil companies will be willing to correct and update the production facility in order to match the safety and environmental standards, however, in China, oil companies just consider how to extract more hydrocarbon in regardless of environmental protection, the administrations do not care that the production will do harmful to the surrounding residents and environments, in addition, the Chinese environmental protection departments can not take effective measures!

[6. CEDC Ithaca](#)
Ithaca, NY
February 26th, 2011
7:14 pm

Thank you so much for researching this issue and publishing this story. Among the many problems with methane extraction is the production of wastes that cannot be readily disposed of. These wastes recently caught on fire in Pennsylvania yet are often brought to sewage treatment plants. The gas industry needs to be tightly regulated - cradle to grave - so that these wastes are not disposed of in parking lots, along highways, in streams and in forests. Thank you again for shining a spot light on industry's dirty secret.

[7. Paul](#)
Austin
February 26th, 2011
7:14 pm

Where are the data to support your claim that rivers are contaminated with radioactive drilling water? Nobody drinks the produced water in its untreated and undiluted form. Although you mention dilution, you have not accounted for it in your analyses. Also, "laced" implies that these radioactive substances are added to the frac fluids. That is not the case. This article reads like a poor highschool science report.

[8. Tara](#)
Allentown, PA
February 26th, 2011
7:14 pm

Thank you for this comprehensive article. Efforts like yours are critically important as the terrifying truth about fracking must be exposed before it's too late. Action needs to be taken to prevent our environment, namely our water supply. We desperately need to stop the drilling until more research is done and proper regulations are in place. The long term effects of the current method of harvesting the gas are devastating. Money is causing many to ignore the big picture. Thank you again for your research and eye-opening article.

[9. Carlton Montclair](#)

February 26th, 2011

7:14 pm

So it takes a year after “Gasland” for the NY times to finally run an in depth article about the dangers of hydraulic fracturing! The movie “Gasland” scooped you all and did it in a much more entertaining fashion.

[10. Claude Wren](#)

Southern Tier, NY

February 26th, 2011

8:27 pm

There’s too many diesel spewing trucks making too many trips, sucking up too much precious water with too many flawed humans involved in too many steps in a process with too many different companies and too many sub-contractors all doing their own too many different things to cut corners, involving too many chemicals and too much sand mined at too much risk to health, with too much noise in too many places, with too many chemicals. With too many gathering lines piped to too many pipelines to too many compressor stations spewing too many toxins to pump gas to more pipelines to more distributing lines to under too many buildings at risk to too many lives from explosion and fire. The only answer is to ban the hydrofracking process entirely as an inherently dangerous and life killing activity. Nationwide. Remove all forms of tax subsidies from oil and gas exploration and drilling. Immediately. Transfer the money to maximize incentives for small scale individual and community solar, small scale community wind, geothermal. Immediately. High speed rail between large cities and light rail in between. Immediately. Localize food. Community gardens and community greenhouses.

[11. learned hand](#)

nyc

February 26th, 2011

8:27 pm

I cant believe that this is all happening on Barry’s watch.

[12. Teresa Jesionowski](#)

Ithaca, NY

February 26th, 2011

8:27 pm

Thank you for this great article. It’s good to have so much information in one place. Thanks for your investigation and good writing.

[13. HIGHLIGHT \(what’s this?\)](#)

Kert Davies

Alexandria, VA

February 26th, 2011

8:27 pm

Apparently the myth of “clean coal” is equal to the myth of “clean natural gas”. The slack regulation of this industrial explosion in Pennsylvania and elsewhere brings echos of the BP

blowout and the gold rush for deepwater drilling in the Gulf of Mexico.

The corporations who have covered up the threats of fracking and of radioactivity and the regulators who have failed, been bought or hidden the truth should all be held accountable. Too much is at stake and rural Pennsylvanians, New Yorkers and others are taking the brunt of it. Polluting fracked natural gas is not a smart or sane bet for our energy future. Bet on clean renewable energy and energy efficiency instead.

And what about the already ailing Chesapeake Bay downstream? The Susquehanna provides about half the water flowing to the Bay. What she doesn't need is more wastewater.

[14.](#) Linda Williams

Pittsburgh

February 26th, 2011

8:27 pm

Stunning. And incredibly well documented. I am just starting to look through the documents in the link, and the wealth of information here is just flat out incredible!

[15.](#) Abby Tucson

February 26th, 2011

8:27 pm

Better check the Colorado and the Brazos. Between Grand Junction and Glenwood Springs on I-70, which skirts the Colorado, there are so many wells around Parachute, I go through a whole box of tissue sneezing because of the gases. And wells in Texas near to the Brazos surround the family cemetery. No one complains in Franklin County because most make a living or a new found fortune off the wells, but I wonder.

[16.](#) Matt

Philadelphia, PA

February 26th, 2011

8:27 pm

Paul, maybe read some of the supplemental materials linked in the article? It's kind of hard to dumb down 30,000 pages of documents so that people like you can understand them. As a Pennsylvania resident, this article has certainly reinforced my concerns regarding these drilling practices. The fact that the water I am consuming as I write this contains these contaminants is highly disturbing to say the least. Great reporting.

[17.](#) Libertine

Connecticut

February 26th, 2011

8:27 pm

Keep on messing with the earth and you'll find out the earth has this nasty little habit of making life here very difficult. . And when it happens it'll be far too late to anything about it. Fools...

[18. BlueMoose](#)

Binghamton NY
February 26th, 2011
8:27 pm

Pennsylvania is experiencing widespread pollution and well poisoning. The gas companies are exerting extraordinary pressure on local officials in upstate NY, including some shady campaign contributions, to do the same in NY including in the Delaware River watershed on which NYC relies for its drinking water. And, to make matters worse, the gas is not being sold but rather stored until prices rise. Meanwhile the gas industry is building a huge new terminal in Louisiana to export American gas. The industry is preparing to rape the Northeast as they have the West. They must be stopped!

[19. John Smith](#)

Philadelphia, PA
February 26th, 2011
8:27 pm

The original source documents back up the scary facts in this article. This amazing piece is nerve racking for the future of our health and safety not only in Philadelphia but all over in the United States where these environmental injustices are taking place.

[20. rhubarb42](#)

baltimore md
February 26th, 2011
8:27 pm

hmm, to Paul Austin, radioactive waste doesn't leave water merely treated to remove bacteria.

to all 'out there'... the industry is drilling because you are using it. Whether we want to point the finger at ourselves in the mirror or distract the discussion towards the 'evil' gas companies who are doing our bidding, the answer to the dilemma is to stop using the gas and minimizing your use of any products it supports (your electricity).

good article.

[21. Joe Smyth](#)

Washington DC
February 26th, 2011
8:27 pm

When our government agencies are too compromised by industry influence to promote the common good and protect public health, the role of the news media to highlight problems and hold people and institutions accountable becomes paramount. It's an important reason why a free press is among our nation's founding values. And investigations like this are why the New York Times has been our nation's leading newspaper.

[22.](#) George Eliot
Annapolis, MD
February 26th, 2011
8:27 pm

Corporations exist to make profits and if people get sick and die so be it.

I'm sure the members of the House of Lords and the House of Commons who take kickbacks from these corporate criminals would agree with me.

And certainly, the right wing buffoons on the embarrassment known as the Supreme Court would agree as well. After all these corporations are just folks like us. Guaranteed the right of free speech, etc. After all under the Chief Liar Roberts, the Constitution was rewritten.

[23.](#) Charlie
Fairfield, CT
February 26th, 2011
8:27 pm

How much water is treated at these plants per day, and what percentage of that is from the wells? Old news that drilling fluid is dirty, but without data showing the chemistry of the water coming out and a direct trace to drilling waste its very difficult to prove correlation.

It would also be useful to test the intake water which people are actually drinking as well as the volume and toxicity of other industrial water that enters the drainage system; ex. farm waste.

Without more context, this is too heavy on fear and too light on data.

[24.](#) squidboy6
Santa Barbara
February 26th, 2011
8:27 pm

Pennsylvania had a bad reputation for drinking water more than twenty years ago, but the addition of fracking-by products has been a nightmare come to life.

Fracking is going to be seen in more and more drilling in the future and it isn't going to be cost efficient once the long term costs are calculated. Communities will have to oppose this practice by tooth and nail in order to preserve their water and air so this article is going a long way to educate the public. I doubt it will be enough.

[25.](#) HIGHLIGHT ([what's this?](#))

Tim B
Seattle
February 26th, 2011
8:27 pm

'The documents reveal that the wastewater, which is sometimes hauled to sewage plants not designed to treat it and then discharged into rivers that supply drinking water, contains radioactivity at levels higher than previously known, and far higher than the level that federal regulators say is

safe for these treatment plants to handle.’

At the heart of this is America’s insatiable need for more energy. We are not the only country with this problem. Some corporations will do anything to promote their bottom line, including trying to discredit studies which show serious environmental harm.

There will come a day when human populations must stabilize because that is the ultimate cause, that and our general lifestyle, which promotes more and more use of energy. Centuries ago, some people lived close to home and rarely traveled more than a few miles from home. A return to simpler times is something we will have to become accustomed to, if not now sometime in the not so distant future.

[26.](#) Jahnay

New York

February 26th, 2011

8:27 pm

Continue to defund education, Planned Parenthood and bust the unions. This will give the Koch Industries and other dirty industries a continuous, illiterate work force that will earn meager wages and get sick from the drinking water and die young not needing any pensions or healthcare.

[27.](#) HelenPB

Sewickley, PA

February 26th, 2011

8:27 pm

Thank you, thank you for your timely article - timely in that only just this week Governor Corbett has removed some of the oversight on drilling in our State’s park lands/forests and is now set to remove the monitoring of pollutants from closely spaced wells and condenser plants to thus hide any combined effect. As a resident of the State of Pennsylvania, I have long been feeling as if I’m standing on the tracks of a runaway freight train, barreling down on me, and all I can do is watch it coming. The money being thrown around here is monumental, blinding way too many eyes who are only interested in how much they can stuff into their pocketbooks, and the attempts at public education are miniscule, maybe some being blocked or shouted down by the greedy industry. Hardly any thought is going into what havoc is being visited on the environment, and no one is putting on the brakes to first see if and how the gas can be extracted safely, even if that might mean some fewer dollars in profits made. But equally if not more important to me, a practicing physician, is the effects on people’s health and well being. I have patients living near one of the drilling hot spots, and there are days when they have to leave their home due to the air contamination (from the flaring of wells, the fumes from the holding pits and condensation tanks, etc.) which causes their eyes to burn and tear, their throats and noses to burn. Their well water became contaminated by benzene and toluene plus a whole list of hydrocarbons, which they became aware of when their 2 dogs sickened and died. Luckily they drank mostly bottled water, but they had used the well water for washing, tooth brushing and cooking. (They now have a huge water buffalo filling their garage and pay for water to be trucked in monthly.) The children have started having headaches and nosebleeds, something that they did not have before. They have been trying to move, but how can they sell their lovely mortgaged home, who in their right mind would want to live there. They don’t want to just walk away from their mortgage, but neither can they afford to pay for two. And their story is not exactly unique. And the wells effect livestock as well. A nearby farmer’s cattle began

having many calves still born or with congenital defects. This stopped when he fenced off the pond which for years had been the drinking water for the cattle. Etc, etc. Again, I am grateful for your article, as many people do read the Times and perhaps the message will spread a little more. But I do fear that you are only preaching to the choir, and the people whose heads are in the sand, will not be reached. I just hope that this will encourage others, in our State to speak out and get the facts spread before PA becomes a wasteland, one big cement slab, not fit for man or beast or vegetation.

[28.](#) Mateo

San Francisco

February 26th, 2011

8:27 pm

Actually, if you want to talk about getting scooped, the gas industry and Halliburton successfully lobbied Congress in 2004 to exempt fracking fluids from the Safe Drinking Water Act.

Landowners from Colorado to Louisiana to Pennsylvania were up in arms, as their water had already been contaminated, and yeah, in some cases, caught fire.

Where was the times then? Where were the New York and DC media when the Oil and Gas Accountability Project published its report on the topic, subtly named “Our Drinking Water At Risk”?

The media, including the Times, are completely AWOL from the issues that actually impact Americans; now that the damage has been done and the industry is exempt from the law, now that children are getting sick and people are losing their homes and water supplies, the Times shows up with the disaster story.

It didn't have to be this way.

[29.](#) lawright

ithaca

February 26th, 2011

8:27 pm

“There are business pressures” on companies to “cut corners,” John Hanger, who stepped down as secretary of the Pennsylvania Department of Environmental Protection in January, has said. “It’s cheaper to dump wastewater than to treat it.”

Cheaper to dump. This is what we are dealing with, folks.

[30.](#) Mary Menapace

Skaneateles NY

February 26th, 2011

8:27 pm

Gratitude for the article - and the references. High Volume Gas Drilling in NY - Why Not? Billions of gallons of water turned into toxic waste. No treatment for it. Thousands of heavy trucks traversing our roads. No state oversight on it. Twenty thousand pounds of chemicals for each million gallons of water. No enforced disclosure. Condensate tanks and compressor stations in our

neighborhoods outgassing known carcinogens. No mandated vapor recovery technology. No need to comply with the Safe Drinking Water Act nor the Clean Water Act. No local municipal input or notification. No hotel rooms available for tourists. No air or water testing, nor health effects nor accident reporting mechanisms. No bonding in place to cover accidents, spills, blowouts. No market for our produce and meat being a drilled zone. No law against compulsory integration yet. No informed consent when signing leases. No incentives to develop safe clean energy alternatives. High Volume Gas Drilling in NY? NO. NO. NO.

[31. John Smith](#)

Philadelphia, PA

February 26th, 2011

8:27 pm

Energy companies: Hey, we put radioactive waste in your drinking water.

A: Is it safe?

E. c.: Making it safer is too expensive.

A: SaFER?!

Science: Yeah...it gives you cancer and asthma and there's no way to get rid of it.

A: How much do we drink before we get sick?

S: Any at all.

A: GOVERNMENT! HELP!

Government: Sorry, no. We'll all have TV for the next 15 years, to distract us from our slow poisoning!

[32. George](#)

North Carolina

February 26th, 2011

8:27 pm

Would not the goal to be to fix up the municipal sewage plants so they can clean up the dirty water they accept?

[33. Jesse Gardner](#)

Philadelphia

February 26th, 2011

9:56 pm

Fracking is a destructive mining technique that is doing great damage to our land and water table in my state of Pennsylvania. And because the industry was exempted by the Bush Administration from any EPA oversight, regulation falls to the State DEP (Department of Environmental Protection), which is hopelessly understaffed. To make matters worse, Governor Corbett refuses to charge an extraction tax on the gas producers, so there won't be a dime for cleanup when the bills come due. We will look back on this episode in our State's history, when all that we can drink is imported water, and be shocked that such an unregulated industry was allowed to pollute at this level.

[34. dwesty](#)

Shanghai

February 26th, 2011

9:57 pm

Governance of the energy sector in the USA is so extraordinarily negligent that we cannot but continue to pollute our land, water and skies. And guess who'll bear the brunt of the impact: families with no breadwinners and no health insurance -- they can't afford the measures to escape ingesting the toxins . All the while, the energy industry becomes more profitable and gathers even more lawmakers into their pockets. Welcome to the third world. Wish I could think otherwise.

[35. MW](#)

Philadelphia

February 26th, 2011

9:58 pm

Hydrofracking is already contaminating the water supplies of millions of people; threatening our health and the health of future generations. These gas companies have the money and political clout to get around government regulation-- they have already bought Governor Corbett. The way forward lies in educating, organizing and mobilizing people to build grassroots power; to demand that our lives be valued above gas companies profits.

[36. Nancy](#)

Pittsburgh

February 26th, 2011

10:00 pm

Just a week after repealing a policy requiring an environmental assessment of Marcellus Shale gas well permit proposals in state parks, the Pennsylvania Department of Environmental Protection has announced it is suspending and reconsidering key air pollution controls governing the drilling industry.

The latest policy changes, detailed in the Pennsylvania Bulletin where official state actions are listed, eliminates a December guideline that regulates emissions from all well operations in a region together, which could result in stricter pollution controls than if the wells are regulated individually. The department is soliciting public comments on “whether any guidance or policy should be considered on this topic, and, if so, what such a policy or guidance might provide.”

The DEP also is seeking public comment on a policy adopted last summer that regulates emissions from non-road, “stationary engines,” including natural gas compressor station engines, which can be diesel or natural gas-powered and can be sources of smog producing emissions.

In a separate but related action, the Department had proposed modifications to the General Plan Approval and/or General Operating Permit for Natural Gas, Coal Bed Methane, or Gob Gas Production or Recovery Facilities (BAQ-GPA/GP-5) published at 40 Pa.B. 5387 (September 18, 2010). So now they are going after the permitting process as well.

“This is troubling,” said Jan Jarrett, president and chief executive officer of Citizens for Pennsylvania’s Future, a statewide environmental group that has campaigned for a state severance tax on Marcellus Shale gas production. “These are the first Marcellus policies the Corbett

administration is trotting out and it appears they are all rolling back environmental protections related to the gas industry.”

New GOP Governor Corbett’s campaign was generously financed by the oil industry. He promised them publicly that the state would not impose extraction taxes on this industry, making Pennsylvania the only major oil-producing state to give them a free ride. Even Palin’s Alaska and Bush’s Texas impose extraction taxes. Such a tax was proposed but defeated in 2009, by the GOP controlled state Senate - so far that’s cost the state around \$130 million.

UNTAXED and UNREGULATED ! ! !

Hey Big Oil, come on up to Pennsylvania boys - it’s the new wild west of profiteering and pollution!

[37. HIGHLIGHT \(what’s this?\)](#)

BR

NY

February 26th, 2011

10:02 pm

It is unfortunate that the proliferation of misinformation has led to confusion and created monsters on both sides of the Gas drilling controversy that only manage to make things worse.

Those who insist in NO FRACKING at all are missing both the opportunity and the point. Fracking will happen because the gas is there. Instead of running around like chicken little, these people should be directing their efforts into making sure this gas gets mined without destroying the environment - and it can!

Although there are additives that drillers put into the water, the really problematic pollutants come from the ground itself. And it is those chemicals that return when the water comes back up. However there are technologies available to really clean this water to an extent that it can be used again in fracking another well, thereby saving freshwater and trucking of freshwater, or safely returned to the environment because it can be cleaned to the new very stiff regulations of less than 500 ppm of Total dissolved solids.

The sad part, is that seizing the opportunity, as they always do, Big Gas and Big Drilling came up with the idea of putting the really contaminated water, that is the frack flowback into the new wells and they are getting away with it. They are injecting pollutants far worse than the proppants they use to keep the fracks open and they are even masquerading this horrible process as being green!

This is what happens when you let your eye move from the ball.

The gas is there. It is coming out. It can be removed with no danger to the water supply but the environmentalists have to push real legislation that can get approved and the government has to enforce it.

Gasland gets a little credit for bringing the problem up, but fairly, the New York Times has been writing about this for years. And the methane in peoples wells and streams comes from natural occurrences NOT drilling. Telling blatant lies and using scare tactics is no more savory when it

comes from the left than when it comes from the right. Gasland had its 15 minutes of fame and it is time to forget it now, and deal with realities.

With proper regulation and support of industry and the community, all of the water that is used in fracking can be recovered, cleaned back to pure water, and the chemicals can be processed into usable salt products like briquettes for water softening.

We must not let the radicals on both sides ruin this terrific opportunity for our country. We can't let the gas and drilling companies dump this frackwater 10000 feet underground while nobody is paying attention and we can't let small minds deprive us from the jobs and fuel independence that Fracking can provide.

Plus if we try hard enough, we can make those truckers fix the roads too.

[38.](#) Nora

Clayton, NY

February 26th, 2011

10:02 pm

One important piece being left out of this comprehensive article is all of the other chemicals which are being used and contaminating the ground water supplies. Because Energy Companies are exempt from EPA guidelines for using chemicals to extract energy, there are many other toxic chemicals being left in the ground water. Radioactive compounds are so toxic for years to come but the other banned chemicals which being used need to be printed here as well. Thank you.

[39.](#) ruth

nyc

February 27th, 2011

12:35 am

In spite of the rapidly growing concern about the damage of this technology, it has not been addressed enough with the kind of depth in the mainstream press it warrants - and for this article: THANK YOU! This study is seriously timely, as the moratorium on horizontal fracking expires end of June 2011. I hope your study will include much more than the damage of radioactivity, which is substantial. Coverage about the impact of land and air pollution and contamination needs to be in print. There is evidence that toxic chemicals can not be filtered out of the water, and even in parts per billion will cause cancer and birth defects. (We also know that because the killer whales' babies in the Pudget Sound are born with cancer caused by rain run-off on asphalt (fossil fuel and gasoline) roads.) Furthermore, the myth that natural gas is going to get us off foreign oil must be debunked now. When all aspects of drilling are considered, there are studies that show it's carbon emissions level is similar to coal. The gas companies are so eager to drill now - not because we can use it in the US but because they can sell it for a lower price than their competitors abroad. Basically, we taxpayers are funding (by exemptions) their profits.

New York City is pushing to convert boilers to natural gas. Burning radioactive gas... what a bad idea that it!

My hope is that the study the NY Times has done will inspire a deeper understanding of the serious risks of continuing to vertical (now happening in upstate NY) and horizontal hydrofracking.

My hope is that New York would follow the lead of Seville, Spain and other cities in converting to a truly green (non-fossil fuel) energy systems now.

We have the knowledge. We now need to push hard for political will.

[40.](#) Elephant lover

New Mexico

February 27th, 2011

12:36 am

What happens to the water used in the mining process is important in the mining of many minerals - not just natural gas. It is important in oil, gold and uranium mining at least. The first question when a company wants to mine an area, is how much water does it require and what becomes of the water once it has been used in the process.

Here in the arid Southwest we have had to give up many mining projects though they would have enriched us. What good is it to be enriched if one no longer has usable water. Important issue.

[41.](#) T O'Rourke MD

Danville, PA

February 27th, 2011

12:37 am

Thank you so much for finally putting all this information in a spot where people can easily access it. Hardly anyone seems to appreciate how important this story is - in 20-30 years it will be dominating everything else - once this water is ruined there is no saving it, and the amounts used are staggering! The worst case scenario, that huge areas of PA and the northeast will become uninhabitable, are more likely than anyone thinks, and the fools agreeing to leases will have worthless properties in just a few years. The companies with money have been buying out all levels of government and quietly settling with confidentiality agreements with everyone with the guts to stand up to them. Watch Gasland. Keep these articles coming, before it is too late!

[42.](#) Bob

San Francisco

February 27th, 2011

12:39 am

Congress plans to cut EPA's budget by a third, reduce the Federal workforce, and furlough staff. Right wing GOP (Newt) wants to disband the EPA.

The new reality, the drinking water protections currently in place will fall by the wayside. Lack of money, staff and will. Fracking is just the tip of the iceberg.

[43.](#) John

Pittsburgh

February 27th, 2011

12:39 am

How much are we willing to put up with from the oil & gas industry? I say enough already!!!

[44. Michael Kenyon](#)

Scranton, PA

February 27th, 2011

12:40 am

The solution is not a new concept. State regulators draft maximum gross alpha radiation effluent standards. State regulators fine treatment plants when those levels are exceeded. Treatment plants are compelled to enforce influent pretreatment standards, shifting the cost onto mining companies. Mining companies get cleaner to save money.

This is what happens when new contaminants need to be managed and it will take about a decade.

[45. chego](#)

pa

February 27th, 2011

12:40 am

And people want to get rid of the EPA?

[46. Bruce Goodchild](#)

Cambridge, Massachusetts

February 27th, 2011

12:40 am

This excellent article is an example of why we still need newspapers with editors and well paid, experienced researchers/writers. Great job!

[47. Don Young](#)

Barnett Shale

February 27th, 2011

12:40 am

My takeaway message from this excellent report : PA Governor Tom Corbett should be jailed for his complicity in this unnatural disaster.

[48. DT](#)

SoCal

February 27th, 2011

12:41 am

It is great that NYT finally stepped up with an informative article on this issue. This current administration is the most useless bunch of lazy bums to ever walk through the White House. The press must protect the country from oil company greed and corrupt politicians.

[49. Charles Brobst](#)

Binghamton, NY

February 27th, 2011

12:41 am

Fracking will leave New York a toxic and uninhabitable wasteland.

[50. finkyp](#)
New York
February 27th, 2011
12:42 am

As a scientist, this whole approach sounded completely nuts to begin with. Pump chemicals into the grounds and get back wastewater with even more chemicals in it? What is amusing is that people seem to think that if it comes out of the ground, it must be “natural” and therefore safe. Well, I had to tell you but radioactive forms of uranium and radon are both natural and REALLY dangerous. Let’s think about our kids a little more....

[51.](#)
R Morris
N.Y.
February 27th, 2011
12:43 am

To call the regulation “lax” seems like the epitome of understatement. Virtually non-existent would seem to be more accurate.

As “gas producers are generally left to police themselves,” the question is, how much longer is this going to be allowed to continue? Perhaps until half the country’s aquifers are contaminated from fracking.

[52. AppDev](#)
EEUU
February 27th, 2011
12:43 am

Health hazards of contamination need to be measured in the drinking water said to be at risk. A careful reader will suspect that when the NY Times was willing to review tens of thousands of documents, it also collected and contracted to analyze samples of water from those water supplies. If the Times had found contamination beyond EPA limits, Mr. Urbina would surely have said so.

[53. Klem](#)
Westhampton
February 27th, 2011
12:43 am

this is journalism i respect!

“burning the wood to heat the house”: I am ashamed to live in a nation that does this

[54. JL123](#)

nyc

February 27th, 2011

12:44 am

So it is near fact that we are poisoning much of our states drinking water. Does Obama's continued inaction on this mean he is immoral and further not particularly interested in the health of middle-class and poor america? Is that a good question or am I missing something?

Its getting to the point where very simple questions like the one I just proposed need to be asked for those whom abstract thought is hard; making the ideas concrete as 1-2-3, so that many may understand that our current government is allowing a good number of us to become ill. Will basic facts like this mean anything to voters and plain folk? Will people allow themselves to drink contaminated water everyday? Yes? Maybe? Why does what is up look down and what is to the left look right, why are so many aspects of our lives falling away from us? Why does Obama look us all in the face and tell us he cares? What is going through his mind? j

[55. j](#)

nj

February 27th, 2011

12:44 am

Much more needs to be done and the public needs to be made aware of the danger. It's great that some families have received a financial windfall by allowing the gas companies to drill on their land, but money is of no value if you're dead.

[56. WSD](#)

Pittsburgh

February 27th, 2011

12:44 am

I would also like to know what the radioactive radon level is in the actual natural gas that we use to cook with and heat our homes.

I have a feeling that this is going to be the next problem.

[57. Laurie Elder](#)

Philadelphia, PA

February 27th, 2011

12:44 am

Thank you for this well written and well researched article. Public education on the detrimental health and environmental effects of the current hydro-fracking process is the first step to getting our communities to speak up. Thank you!

[58.](#) mb

ny

February 27th, 2011

12:45 am

The EPA has been stripped of its function to protect the environment in the case of hydraulic fracturing. The methane and other 'irritants' that are produced, go by with no oversight. This is disgraceful and completely obviates the purpose of the EPA. Hydraulic fracturing is the latest and outrage against the environment. Thank you for starting to publicize this "activity".

[59.](#) WSD

Pittsburgh

February 27th, 2011

12:45 am

My Drinking water comes from the Ohio River 10 Miles downstream of Pittsburgh. It is going to be up to individual citizens to test for radioactivity?

Why is everything in this country so short sided.

Can't we see what this will do to the environment and our long term health?

In a few years I can only imagine how bad the Mississippi River will be around Louisiana. It will collect all the radioactive waste from the mid-section of the country.

[60.](#) loretta

pittsburgh, pa

February 27th, 2011

12:46 am

Thank you, thank you, and thank you again for this terrific piece of journalism. After reading everything I could regarding this industry, attending talks, lectures and visiting affected sites, I feel like the truth about this corporate nightmare is finally being revealed. This A-moral corporate/government- backed operation is one of the greatest atrocities imposed on the unsuspecting public in recent years. Jobs and money???, I would love to see the jobs (unemployment rates continue to rise) and where is all of the money?? Pennsylvania has a huge budget deficit and continues to impose cuts....to the EPA and DEP!!! This industry fills the coffers of the politicians (our Governors; past and present), but will bankrupt this State with the environmental assault and damage to the infrastructure. And the government wants to make cuts in healthcare just when we will be needing it most!!! Maybe that is why they want to cut it for so many of the working poor.....after all, we are just collateral damage. 'An injury to one is an injury to all'I applaud this piece on drilling!

[61.](#) Amy Cheatle

Ithaca, NY

February 27th, 2011

12:46 am

A wholehearted thank you, NYT.

[62. Dennis](#)

Hopewell, NJ

February 27th, 2011

12:46 am

All I can say is this all makes me very sad and angry. Unfortunately it does not surprise me. Industry funding to get compliant people elected to office ensures that meaningful regulation will be impossible to achieve.

[63. Mike Flaherty](#)

Naples, NY

February 27th, 2011

12:46 am

Finally! An in-depth investigation into the dangers of hydro-fracking. This is VERY scary stuff! The unfettered greed of gas companies and the politicians to whom they contribute could end up destroying water supplies and land across our nation. Where is the federal EPA? I pray that NY state politicians don't fold under pressure from the industry and their enormous contributions (as our U.S. Rep. Reed has). Protect our state from the ravages of this horrendous process!

[64. Karen](#)

Klousner

February 27th, 2011

12:47 am

Fantastic article--FINALLY a major national news outlet is covering this! The federal clean drinking water law has been gutted, and Pennsylvania has very weak laws regulating financial contributions from lobbyists and industries to politicians, from the State Supreme Court to the governor. This has numerous negative effects on the state, including fracking.

For instance, Philadelphia recently became the biggest city in the United States to have a casino (in this case, on land where William Penn made a treaty with the Native Americans)--over the vociferous objections of the local community. But Governor Rendell made a deal with the casino industry, which gave him \$1 million in campaign contributions--and that's just the money *on* the record--much is not required to be disclosed.

Fracking is just too dangerous to our drinking water. Congrats on a great article.

[65. Tom/Catskill Citizens for Safe Energy](#)

NYC

February 27th, 2011

12:47 am

At last, the type of coverage we have been requesting for years. We can live without gas, but we can't live without water. www.catskillcitizens.org.

[66. Jeanne McMullen](#)
Pittsburgh, PA
February 27th, 2011
12:47 am

Thousands of residents of Pittsburgh and surrounding suburbs received a letter from Pennsylvania American Water admitting that had become foul tasting and foul smelling and if we didn't like it to buy bottled. Clean water is quickly becoming a more valuable commodity than gas. We need to come together and march on Washington demanding an immediate cease and desist order on fracking activities and an investment in solar and wind energies, sources that some other countries (Israel and Holland) rely heavily on.

I'm tired of people saying "There's nothing we can do." Look at Egypt. We have more power than people admit. Go to marcellusprotest.org and join the movement!

[67. Duane Williams](#)
Benbrook, TX
February 27th, 2011
12:47 am

Pittsburgh claims to get its drinking water from the Allegheny, not the Mon.

[68. HIGHLIGHT \(what's this?\)](#)

Rebecca
Anc., AK
February 27th, 2011
12:47 am

Standard environmentalist scare tactics are to set the level of a chemical so low that the majority of samples are now classified as "toxic". A more important (and responsible journalism) question in this article should have been: exactly what levels of radium constitute a threat to the public health. A lengthy article such as this one should have clearly stated that there is a vigorous debate over exactly what constitutes a dangerous level of radium in water, and if the levels are changed much of the problem disappears.

The facile response to this point is typically that the proponent is the member of the oil/gas/mining/nuclear industries and can be therefore dismissed, but never do you hear the corollary that an advocate of the expensive and unnecessary removal of all trace concentrations of a naturally occurring substance is a watermelon environmentalist/Luddite/wackko. The general public rightfully needs direction and this of course requires first rate and unbiased science. The great pity is that the EPA is unable to produce it and Congress write laws that encourage stalemate in the courts but little else. No wonder the public is confused.

Does anyone stop and consider the alarmist methods used to shut down nuclear power in the 1970's. The country switched to coal and a new set of bugaboos in the form of acid rain, mercury, fly ash and gasp CO2 were created. The country switched to natural gas and now we are threatened by waste water, radioactivity and rig numbers. When will the public learn that environmentalists will create a problem with every industry they wish to stop, regardless of whether those concerns are valid.

[69.](#) Ted Popovich
Pittsburgh, PA
February 27th, 2011
12:47 am

Finally, we have some traction in the media on the issues that favor the oil and gas industry at the expense of public health.. The Pittsburgh Post=Gazette is publishing a special section this Sunday on hydraulic fracturing as well. The mantra of the industry and in-step politicians and regulators is jobs and economic growth What a lot of rubbish when the health of our citizens is at risk.

My municipal water authority is the first intake on the Ohio River after the confluence of the Allegheny and Monongehela Rivers. The PA DEP has issued permits for the discharge of produced water into municipal waste treatment plants on both tributary watersheds. I suspected that radioactive materials could be in the water. Your article confirms that suspicion and I am horrified.

[70.](#) jwp-nyc
New York City
February 27th, 2011
12:47 am

Don't worry, the same technology and industry that sees profit in pumping secret ingredients including a list of a few hundred known toxins, carcinogens, mutagens, and radioactive substances, along with corrosive salts, acids, and chemicals designed to facilitate their dispersion so as to make them even more difficult to filter out, that same technology and industry, stands ready, eager, poised, to sell you reconstituted bottled water for your consumptions. As for taking a shower, you can pay extra or you're on your own.

People think this is all about the need for fuel. Really, it is all about the Kochs and their ilk seeing the tremendous profit in selling us back the resource that we once were rich in, clean potable water.

Could someone please start an investigations into the Koch family and why they are being allowed to destroy America. Thank you.

[71.](#) HIGHLIGHT ([what's this?](#))
[John Pgh](#)
Pittsburgh, PA
February 27th, 2011
12:47 am

Thanks for drawing attention to this issue; public awareness of this scandal is catching up to the industry and to the politicians whom it has in its pockets.

I would, however, take issue with your claim of 'rare support' from environmentalists. Natural gas has been shown to be at least as dangerous as coal with respect to its impact on climate change. And, as a 'source of jobs' (which has 'lawmakers' frozen in their tracks), natural gas drilling is a classic boom-and-bust phenomenon. As seen already in the West, and soon to be demonstrated in Pennsylvania, the 'jobs' involve early public costs - justified by the promise of revenue growth - which are never recovered. Depressed communities are left in worse condition than before the drillers arrive.

So, gas drilling is NOT a trade-off between risks and rewards: the 'rewards' are illusory, and the 'risks' are all on the downside. As for 'science', Governor Corbett is doing all he can do to ensure that no data on gas pollution will ever see the light of day.

[72.](#) vrlc50

Northeastern PA

February 27th, 2011

12:47 am

It amazes me that Pennsylvania is falling for it again....believing the hype the gas companies spew to our legislators. You'd think with this state's history with the coal companies, this state would at least be wary. But no, they've paid for this state's governor and most of its senators and representatives, who think that laws dating back to the 1980s cover a technology that has been around for only 7 years (per Range Resources; they're first horizontally fractured well in the Marcellus was in 2003; the first multi-well pad didn't come 'round 'til 2007.) In fact, they think those regs are too hard on the industry. And g-d forbid that industry be forced to pay any kind of taxes to mitigate the damage they are causing daily. We in the gasfields of Pennsylvania are living in a war zone. I hope this article does SOMETHING to wake up those who aren't living with the consequences of natural gas drilling on a regular basis....because this industry has no intention of stopping with us. We just have limited political pull than the urban areas of our country. Soon or later, though, the damage to our water and air is going to shift eastward and southward, and the urban water and air is going to be completely out of luck....because by then, it won't be fixable.

[73.](#) Tom Krebsbach

Washington

February 27th, 2011

12:47 am

This is an excellent journalistic report. I state that as one who is a big advocate of natural gas production and use in this country. Only when the public is assured that natural gas is being extracted in a safe and environmentally responsible way, will natural gas flourish as a solution to America's energy problems. The industry needs to keep this in mind.

Clearly, we have a ways to go in assuring that treatment of natural gas waste water is universally being performed in a responsible manner. However, it would be wrong to blame the industry for this. Obviously industry will do the minimum that is required by governmental regulators. If these regulators are not requiring industry to do what is necessary, then the fault lies with them and the political bosses above them.

One should also keep in mind that certain politicians tend to view any sort of regulation as anathema, even if these regulations are very effective in safeguarding the public. I speak primarily of Republican officials. The current governor of Pennsylvania is a good example. If you are concerned about adverse health effects from any industrial practice, then don't vote for Republicans and expect them to safeguard the public health. They are simply ideologically opposed to doing what is needed to provide such safe guards.

America is fortunate to have such vast reserves of clean burning natural gas to draw on for its energy needs. We should be promoting the use of natural gas, along with solar and wind energy, to power our vehicles and generate the needed electrical power. Natural gas burns so much cleaner

than coal and gasoline and it emits much less CO2. The key is not to disavow the use of natural gas, but rather to put in place the necessary practices for environmentally friendly gas extraction.

[74. James Barth](#)

Beach Lake, Pa.

February 27th, 2011

12:47 am

Hallelujah! On the eve of the Oscars, the NEW YORK TIMES has finally published an in depth article on one aspect (wastewater disposal and lack of treatment) of the immense danger to our drinking water from high volume, slick water, multi-stage hydraulic fracturing and horizontal drilling into shale.

The entire Marcellus Shale extends over about 95,000 square miles, and multiple States, but closer to home, roughly 36% of the Delaware River Basin lies over this target zone (4,874 sq. mi). Almost 9 million New York area residents get their drinking water (unfiltered) from the West of Hudson NYC watershed, which lies within the Delaware River Basin. Another 3.371 million citizens, living in 119 municipalities in PA and NJ are “served potable water by a Public Water Supplier that withdraws water directly from the Delaware River.” All in all, the Delaware River Basin provides drinking water to more than 15 million Americans.

The Delaware River Basin Commission estimates that as many as 18,000 such gas wells are to be drilled in the Basin (this does not include vertical gas wells, and it only considers the Marcellus Shale, not the other stone, gas bearing layers).

Besides the Marcellus Shale layer, the Utica Shale, the Oriskany Sandstone, the Trenton Black River, and the Onandaga limestone layers, are also target gas zones. The under regulated, proposed, massive industrialization, by this process, of our watersheds, is a direct threat to our water, air, soil, wildlife habitat and landscape.

Despite this clear and present danger to the drinking water of many more millions of Americans out west, that this type of gas drilling and extraction presents, it has been one of the most difficult issues to get the major media to cover.

Is it a coincidence that the first major article by the New York Times appears on the very day of the Oscars, when Josh Fox’s “GASLAND” may win the academy award?

Better late than never. As a research coordinator for Damascus Citizens for Sustainability, a grass roots group fighting this threat for the past three years, especially in NYS and PA, and located on the Delaware River, we welcome this in depth investigation that only the NEW YORK TIMES is capable of.

Now, if the citizens of New York, PA, NJ and Delaware would contact the Delaware River Basin Commission (DRBC), whose next public hearing is this coming Wednesday, the 2nd of March, in order to protest the DRBC’s draft regulations that will allow such drilling in our watersheds, our voices can make the information provided by this article, more powerful.

The DRBC should have conducted a cumulative environmental impact study, and risk assessment prior to the formulation, by its staff, of the proposed regulations. Instead, it is proceeding forward, under immense pressure from the Governors of PA and NJ.

Only the citizens of the member states within the Delaware River Basin, can counter the weight of Gov. Corbett, and Gov. Christie. Our voices must be heard, backed by the weight, and respect, that the New York Times coverage provides.

[75. kimfeilgood](#)

Arlington TX

February 27th, 2011

12:47 am

I literally rec'd details on a spill in our aquifer, Lake Arlington TX, a few minutes ago on an email forward from an open records request. This spill happened 7 months ago. Twice the spill was identified as produced water, yet once it was called frac solution. Our city officials sadly may not know the difference. Months ago I asked them if they would test our Trinity water for heavy metals and was told that we were not set up to do that. For a town that has 100 wells under it's drinking water source for over 500,000 people, ya think they'd be a bit more open, protective and professional?

[76. HD](#)

USA

February 27th, 2011

12:47 am

The "Good Grey Lady" is late to this party - as usual. Where was this article when it could have stopped fracking in the beginning. Now there's an infrastructure and investment and there's no way fracking will end. This story has been common knowledge for a long time and, frankly, is too little, too late.

[77. HIGHLIGHT \(what's this?\)](#)

Jill

Houston, TX

February 27th, 2011

12:47 am

The facts are that the US discovered this technology and have implemented it with great success since the late 1990's. During that time, onshore gas reserves (quantity of discovered, unproduced hydrocarbons) has increased over 1.5 times. The onshore production bonanza is expected to offset the "easy oil" declines of reserves in Alaska and the Gulf of Mexico. In fact 1 out of every 3 units of gas coming from your stove was drilled/produced in the past 3 years. As a result of this new supply natural gas prices have decreased significantly and changed the balance of global politics and CO2 emissions.

According to Federal statistics, enough electricity producers have switched from coal-fired to gas-fired power that the equivalent of 12 million cars have been effectively "taken off of the road" (coal electricity emits 2x CO2 to gas). This is a product of lower prices from higher supply resulting from shale gas production.

Also as a result, the US gas production is pushing more global gas into the European market, which has stymied Russia from exerting hegemony over Europe (recall the Ukrainian gas crises).

Since Carter, presidents have bemoaned the “dependence of foreign oil” as an “addiction”, which is true. We all own this problem and the solutions to get us there. I wish that NYT would take a more balanced view, report this home-grown success and hold the Obama administration accountable to encourage (with proper oversight) development of US resources, using US technology responsibly. The outcome would be creation of the supply necessary to tip the balance towards electric vehicles, powered by cleaner natural gas, and thereby decrease the tension we all feel about the impact of the latest riot in a Middle East town thousands of miles away.

We have the resources and the technology to do it, all we need is the Obama administration and the fourth branch of government to LEAD and put us on a sustainable path to independence. “Biggest environmental issue of our time”? No, biggest opportunity to make a step change in the energy and political calculus.

[78. Ringleader](#)

Western Colorado

February 27th, 2011

12:47 am

Nice piece on this issue, but surprisingly late. The drilling in upstate New York will likely affect hundreds of thousands if not millions of water consumers throughout New York. This issue has been pending for some years so while I highly compliment you on your reporting here along with the great graphics, it’s surprising that it’s taken you this long to put resources in this direction. If you go through back issues of the New York Times, you will find hundreds of articles on hem-lines, heels, trendy restaurants serving pork, real estate tycoons in Tribeca, but scant few articles on your own watershed. I live 2,000 miles away, and I think I worry more about New York drinking water than you people do. Great paper, but spend a little more time on your watershed and a little less on fine hosiery.

[79. Adam Law, MD](#)

Ithaca, NY

February 27th, 2011

12:47 am

I applaud your investigative reporting and also the large cache of documents you have made available for review. I am a clinical endocrinologist (a doctor who specializes in illnesses caused by hormones and the glands that secrete them – diseases such as diabetes mellitus, thyroid disease and problems with reproductive organs) and my practice is in Ithaca, NY. This is in an area famous for the natural beauty of its water resources but also sitting on-top of the Marcellus shale – a prime target for unconventional natural gas extraction by hydraulic fracturing. Your article particularly highlights the risks of radioactivity and toxic chemicals such as benzene. From my point of view I am also most concerned about the potential for disruption of the endocrine system by the chemicals used in the hydraulic fracturing fluid and also in the flow-back and produced waters. Given the multiple routes these chemicals may enter our drinking water, I want to emphasize that extremely low concentrations of endocrine disrupting chemicals (parts per trillion) may have an effect on key developmental processes during pregnancy. These chemicals can potentially cause permanent modifications to genes changing the way they are expressed and hence causing effects that may not become manifest until decades later in adult life. At this time we have no way of quantifying this risk as we do have any information as to the exact chemicals used in this process (aside from limited lists posted on a slick website by Halliburton - www.halliburton.com... - that is not designed

for scientific study, but for the purposes of falsely reassuring the public by making parallels with chemicals present in the home). We simply don't have enough data for standard risk analysis. Also, this data is going to be very difficult to acquire and will need innovative epidemiological (public health) study designs. So, together with the troubling data in this article about radioactivity and chemical toxicity, this concern about endocrine disruption warrants the adoption of a strong version of the Precautionary Principle before further natural gas exploitation by hydraulic fracturing.

I am pleased that the highly respected Medical Society of the State of New York has adopted a resolution on December 9, 2010 stating the following:

“RESOLVED, That the Medical Society of the State of New York supports a moratorium on natural gas extraction using high volume hydraulic fracturing in New York State until valid information is available to evaluate the process for its potential effects on human health and the environment.”

I think this article in the New York Times starts the important process of informed consent that must proceed before further drilling is allowed not only in New York State, but in other states and other countries.

[80. Take that Ride](#)

Jersey Side

February 27th, 2011

12:47 am

Thanks to lax federal regulation, and zealous support from the Govs. of Pennsylvania, New York, and New Jersey, fracking is about to completely despoil the Delaware, the longest and cleanest non-dammed river East of the Mississippi. Fracking is dangerous and destructive. Have we learned nothing about the perils of letting corporations rape the earth for even more profits?

[81. hlouisnini](#)

Mexico

February 27th, 2011

12:47 am

For god's sake let's stop wringing our hands and go to work - want to stimulate the economy - want to put the U S in the lead again - want to do something productive about unemployment - then first tell Exxon-Mobil to get stuffed - second establish a Federal program to put young engineers, technicians and thinkers to work solving the toxic waste water problem with oil shale - then third design and build the infrastructure to distribute the gas nationally and finally fourth - involve the Defence Department in the military use and protection of this resource.

[82. HIGHLIGHT \(what's this?\)](#)

Tom

NJ

February 27th, 2011

12:47 am

This article is indeed timely, as others have noted: The Delaware River Basin Commission (DRBC), a multi-state compact with authority over the drinking water of 15 million people, including New York City, Philadelphia, and much of New Jersey and Delaware, has recently issued draft regulations that would allow unconventional gas production in that watershed. Regulators have said they anticipate the construction of 18,000 wells in the Upper Delaware Basin, yet there has been no

cumulative impact study to determine whether this can be safely done near the water supply of 5% of the US population.

It is the governors of these individual states -- PA, NJ, DE, and NY -- along with the federal government, represented by the Army Corps of Engineers, who have the five votes that control the fate of our drinking water. It is widely thought that New York and Delaware would prefer to conduct a cumulative impact study before adopting regulations (2 votes), but Pennsylvania and New Jersey have been pressing hard to fast-track drilling (2 votes). New Jersey, in particular, stands to gain nothing from the drilling itself, even though its water supply will be severely jeopardized.

Unfortunately, the Obama Administration has done nothing to reign in the Army Corps of Engineers, which has given signs that it will provide the critical third vote in favor of allowing the drilling to go forward immediately. This vote properly belongs to the Federal Government itself, and not to the sole discretion of the Army Corps; indeed, other federal agencies, including the National Park Service and the US Fish and Wildlife Service, have urged the Army Corps to use its vote in favor of a cumulative impact study. These requests have so far been rebuffed.

Please urge President Obama as well as the Governors of the above-mentioned states (esp. Gov. Christie, who appears to be ignoring his own state's vital interests for reasons that are not entirely clear) to insist that a cumulative impact study be conducted. Such a study would determine whether and to what extent this method of drilling can be performed safely; without it, vast numbers of people are being subjected to a very dangerous experiment.

[83. kimfeilgood](#)

Arlington TX

February 27th, 2011

12:47 am

A word about MCL Maximum Contaminant Level.. no one knows what the combination of 2 or 3 or more different effluents mixed that forms a unique substance that has no regulations. Just because it hasn't been invented (combined) doesn't make it any less lethal. You can have a myriad of effluents just under the threshold and not consider the whole cocktail...that is what is happening in our water, soil and air. These unknown, multiple, toxic combinations over a cumulative period render us lab rats under the guise of legality.

[84. martinusbear](#)

CA

February 27th, 2011

12:47 am

Just another case of Pennsylvania raped by unscrupulous barons of free enterprise and greedy public servants whoring their office.

[85.](#) Josh Knauer
Pittsburgh, PA
February 27th, 2011
12:47 am

For those interested in exploring the data around the impacts of the Marcellus Shale play, I'd strongly recommend going to <http://www.fractracker.org> which is one of the best resources there is for digging into the data underneath this whole issue.

[86.](#) Red
Painted Post, NY
February 27th, 2011
12:47 am

A major problem with the whole fracking situation is lack of information. There is inadequate data concerning drinking water and river/lake water contamination pre and post fracking, monitoring for carcinogenic and or toxic compounds. In addition, portions of the chemicals used for fracking are proprietary secrets, and to my knowledge known only to the companies using them, rather than to the regulatory agencies and the general public. If some type of more general monitoring process were instituted, with pre fracking testing at multiple sites of drinking water and ground water, and post fracking testing at regular intervals, it would provide some useful measure of the degree of contamination. This could be useful as well to compare the overall release of toxins and carcinogens with other forms of energy production: eg the release of toxins and carcinogens from coal mining and burning. This would help society as a whole decide how best to develop our energy resources. (for those of us who believe it can't wholly be left up to the "free" market).

[87.](#) Marcellus Refugee
Hughesville, Teksylvania
February 27th, 2011
12:47 am

This is a dispersed industrial activity that is rapidly converting hundreds of thousands of acres of Pennsylvania from sustainable farms & forests into industrial parks. The impact of this madness goes well beyond the air pollution, water pollution, road damage, and cultural disruption that are now readily apparent. The forest is being sliced and diced, fragmented on a scale not seen since the ecological holocaust of nineteenth century logging. Centuries of damage is occurring to our watersheds and forests in the quest for a few decades worth of climate-damaging fossil fuel. It is a classic boom & bust economic model of unsustainable resource extraction. As with timber and coal, the communities of the region will be left with a legacy of ruin and devastated economies. That we continue to allow this stupidity is a testament to the power of corporate greed and political corruption to disenfranchise local populations. Kudos to the Times for daring to expose the radioactivity issue.

[88.](#) Neal Barkett
Warren, Ohio
February 27th, 2011
12:47 am

It's ashame that we have this great stockpile of domestic natural gas and in the name of saving a buck some reckless companies will ruin what could be such a positive for this country's energy

needs. We spend over a half a trillion dollars for foreign oil which is far more hazardous to the environment when used as a fuel compared to natural gas. Their needs to be much more oversight and fees on the drillers to pay for this oversight. You can't trust the companies to do the right thing so that's when the government is supposed to step in and protect their citizens. Natural gas emits 20% less Co2 and 80% less pollutants when used as fuel than oil or coal. I would hope this industry gets its act together for the good of all concerned.

[89.](#) Allison

Sausalito, Calif

February 27th, 2011

12:47 am

They are willing to destroy our habitat and entire ecosystems for profit. This is insane.

[90.](#) Laughingdragon

California

February 27th, 2011

12:48 am

I am amazed that your local governments haven't stopped this. Why do your sewage plant operators feel they should accept unsuitable water? There is no law stating that they must. Let the well drillers pay for their own waste processing.

[91.](#) Kim

Arkansas

February 27th, 2011

12:48 am

Make the drillers, the industrial ag producers, etc. pay for independent investigations to prove that what they're doing isn't harmful before they're allowed to take one more step.

[92.](#) Ch

Nj

February 27th, 2011

12:57 am

Thankyou for this great article.I live on the nj side of the Delaware river across from the gas fields and I have a well.the republicans would like to abolish the EPA ,drill baby drill,lower corporate taxes,open public park areas to drilling,deregulate everything,privatize anything they can make a buck on .they'll hold hearings,do nothing ,then defund any oversight. The only american exceptionalism they truly believe in is for themselves.

[93.](#) Paul Gallay, Riverkeeper

Ossining, NY

February 27th, 2011

12:57 am

What's the most frightening part of this story? Is it the untreated radioactive waste going into our rivers?

The toxic chemicals putting Rocky mountain-high air into the danger zone?

The asthma epidemic that followed a drilling boom in Texas?

This story makes it clear - fracking is a national disaster.

<http://www.facebook.com...>

[94. ekeizer4](#)

Oregon

February 27th, 2011

12:57 am

It's good to see this sort of investigative reporting being done by a major newspaper. While ProPublica's investigations and articles are always interesting, non-profit foundations and private donors are no substitute for an informed, powerful free press. It will be a sad day when such quality reporting can no longer provide profits to keep newspapers in business. I'm glad that the Times continues to maintain its high standards; an article on drilling and pollution may not sell as many papers as a scoop on Lindsay Lohan or some other tabloid phenomenon, but it is certainly an example of the depth and quality that all journalists should strive for.

[95. tom.mcinerney](#)

L.I., N.Y.

February 27th, 2011

12:57 am

We need to carefully measure all the water which comes up from the ground as a result of the drilling , quantitatively , and continuously; and track it for epidemiological studies.

The drillers can probably improve outcomes by attending more carefully to cementing underground sections.

It is one thing to contaminate aquifers with pollutants of One type , preferably one which existing wastewater treatment plants routinely mitigate or trap. It will be extremely expensive to filter agricultural and drinking water supplies for alkanes , aromatics , radioactive species and corrosive salt agents. The gas companies must set aside substantial sums to address these looming and burgeoning scale problems.

[96. mjm](#)

Pittsburgh, PA

February 27th, 2011

12:57 am

Many citizens in PA do not feel represented by Governor Corbett. His recent election was heavily financed by the gas industry. Any position he takes on this subject is tainted by these contributions. It is very troubling that the passage of Citizens United has opened our democracy to serious undermining by corporate influence on a scale not seen before. As citizens, we no longer expect a fair hearing for our concerns. PA residents are worried about the risks to our water sources that this

article describes. Unfortunately, the governor is now as much as threat to safe drinking water and community well-being as the gas industry is.

[97.](#) dreevesx
San Diego CA
February 27th, 2011
12:57 am

I hold no hope for widespread understanding of science. It seems that many Americans think that there's no need to rely on science for information when the pastor and the Bible convey more than enough reliable information, and furthermore, can promise life after death.

[98.](#) Woo Hoo
USA
February 27th, 2011
12:57 am

It Begins! The NYT and MSM are loathe to allow the U.S. to remain competitive. China must laugh at these articles. Or perhaps they pay for them?

[99.](#) Geri Aird
Fayetteville, NY
February 27th, 2011
12:57 am

As a member and leader in faith congregations, which are studying and advocating with legislators on environmental health and water justice hydrofracking concerns, I want to thank you for your comprehensive article with original source documentation. We will be using some of them.

[100.](#) saudiapaige
Wayne County, PA
February 27th, 2011
12:57 am

Thank you for the article. There is a visible result of the salt waste in the gas drilling process. It comes in the form of rusting vehicles. The salt mixture on the roads in the winter in PA, comes from the gas drilling process. The EPA calls this brine "beneficial waste". It is extremely concentrated brine. You can find the information on their website. I would like to know what other chemicals are in this mixture. What have I driven over this very hard winter, every day. My car did not pass inspection this December, as did many other cars in Wayne Country. Reason? Rust from the brine. It is worst on the driver's side of the car. The driver's side is closer to the center of the road where the highest concentration falls. Has this been tested to know if it is more than brine? This runs off the roads and into streams and tributaries and on to the Delaware River. In the scheme of things going on, this may be a small thing, but it points to bigger issues of pollution already going on.

[101.](#) Katherine in PA
Philadelphia, PA
February 27th, 2011
12:57 am

All of this because our former governor, Ed Rendell, and our current governor, Tom Corbett, and almost every member of the state legislature here in Pennsylvania have never met a campaign contribution they didn't like. The natural gas companies have paid them off and both governors have committed to levy no extraction tax on the gas companies which will make billions here. (Pennsylvania is the ONLY state not to tax extraction - which could help the state pay for the environmental disaster that is on our doorstep!) This is yet another corporate money grab, aided and abetted by corrupt politicians, and when the chickens come home to roost, all of us little taxpayers will foot the bill. It makes me want to throw up.

[102.](#) Mary
Pennsylvania
February 27th, 2011
12:57 am

It is insane to allow gas companies to inject hundreds of toxic chemicals into the ground and not even tell us what the chemicals are because the formula is "proprietary." We need to repeal the Halliburton loophole and the EPA needs to step up and do its job and place a moratorium on all new drilling.

[103.](#) eileen
philadelphia,pa
February 27th, 2011
1:22 am

Earlier, in the article, a reference was made to how much money this would bring to Pennsylvania, a state that was frequently financially in trouble. But no taxes will be assessed the gas companies. They are free, in the truest sense of the word, to drill, to deny contamination is a problem, to take the money and run. They are allowed to write their own spill reports; they have no interest in cleaning up because it is too costly. We shouldn't be counting on them to fix the roads after they have done their damage. It's astonishing to read the quantities of contaminants and how they are far, far above the standards for clean air and water. Maybe the movie "Gasland" should go viral on the web - that would give a powerful boost to highlighting the bad news about the whole gas drilling phenomenon.

[104.](#) [Word of Mouse](#)
new york
February 27th, 2011
1:22 am

Will we ever learn? 100 yrs ago in Pennsylvania the coal industry was polluting the streams and water ways of N.E Pa. some still have never returned to their natural quality. I hope this expose' will lead to regulations with strong enforcement.

[105.](#) G

Los Angeles, CA

February 27th, 2011

1:22 am

YOu need to watch the documentary “Gaslands” which forcefully uncovers the situation in which people are being poisoned...and are powerless to stop it.

[106.](#) Lauren N

San Francisco, CA

February 27th, 2011

1:23 am

I am so glad this is finally coming to light in the US. While visiting Canada some 7 years ago I watched an excellent documentary covering the problems found there with the fracking process and the ill effects of its implementation on the environment and people. I’ve been disappointed that it hasn’t been more in the news here. Thank you for your excellent reporting and please keep on this and try to at least increase the pressure of getting proper testing in place. I doubt that the interests of the gas industry can be overcome, sadly, but at least people might be informed enough to try to take some personal precautions.

[107.](#) Coates

Washington State

February 27th, 2011

2:11 am

The Marcellus Shale is one of the world’s most closely monitored gas fields. If gas companies can operate with such impunity in the midst of a densely populated region, just imagine what they’re doing in the nameless, unpopulated forests of northeastern British Columbia, where the Horn River and Montney shale plays are poised to become the continent’s biggest producers of hydrofracked natural gas.

Thanks for the story. This is why we need papers like the NYT.

[108.](#) Aaron

Pittsburgh, PA

February 27th, 2011

2:12 am

NYT, thank you for doing such a well-researched investigative piece on this issue. More people in Pennsylvania and throughout the affected states are starting to ask questions and demand research, and this piece is a model of the type of unflinching journalism that seeks the truth, wherever it leads.

Whenever the extractive gas corporations claim that no scientific studies have shown that their practices contaminate water and air, citizens who live in the affected communities must insist that it is the CORPORATIONS who must bear the burden of proof. If they cannot produce compelling evidence, the citizens of those communities should assert their local rights to “life, liberty, and the pursuit of happiness” to not allow those practices.

[109.](#) Cecily Anderson
Philadelphia, PA
February 27th, 2011
2:12 am

This kind of evidence of air and water pollution from shale gas drilling in Pennsylvania keeps piling up, but our regulators have shown little inclination to slow the sprint toward tens of thousands of wells being drilled in the state. One has to wonder, is this the fabled revolving door between industry and government oversight at work?

As far as I know, there are no known links between wind and solar power and cancer, nor do they cause asthma, debilitating headaches, nausea or reproductive disorders. It strikes me as highly cynical to endanger our health so recklessly, especially when we could be putting our energy toward increasing efficiency and expanding safer sources of energy.

[110.](#) JA
New York
February 27th, 2011
6:58 am

As always, especially in energy, life is complicated. But it is also made more confusing by partial and incomplete information. We need to separate the potential contamination of the aquifers, which is easily minimized by an adequate casing and cementing of the well (with continuous monitoring) from the problem of treatment of the fracking fluids. A well can not contaminate the aquifer, which is usually thousands of feet above the producing region if the piping and cementing is done right. A loss of gas through the pipe to contaminate the aquifer would be bad for business, so it is not in anyone's interest to have gas seeping uncontrolled (the capture of gas is why the well is drilled in the first place). A very different problem is the treatment of the fluids used in fracking. This requires strict legislation for the re-use of the water and investment in adequate treatment facilities (the cost of which should be added to the gas production costs). Only in this way can we have a secure, domestic, green and efficient source of energy that creates jobs and respects the environment. Until these things are discussed seriously, calmly and with facts in hand, this debate will be in the hands of irresponsible, or interested, parties.

[111.](#) Red State Gal
Maryland
February 27th, 2011
6:59 am

I am just heartsick because the oil companies moved into our little valley. In my state, they are allowed to drill wells 200 feet from a residence. The gas companies own all the mineral rights, and so they do not have to be good neighbors at all. They run huge lights 24/7, the noise is awful, the trucks and the dust they kick up are intolerable, and the air and water quality have all gone downhill. Now they have been given the right to "cluster dill," meaning they can put 4 wells in a cluster within a quarter mile radius. They are also drilling saline disposal wells to dump their frack fluid.

Why is the US allowing these companies to piss and poop all over people's land and water? Once you contaminate an aquifer, it's contaminated for good. Clean water is much more precious than natural gas. Clean air is much more precious as well.

But the oil companies spread their dollars far and wide. They line the pockets of the politicians. They are raping and destroying the United States of America, and I hope the federal government has the guts to stop them. The states surely won't . . .

[112.](#) Living the Drill

NYC

February 27th, 2011

6:59 am

THANK YOU, New York Times, for publishing the first major media coverage of fracking and the dangers to our water supplies, among many other associated problems. I cannot tell you how long this article has been needed, or how many times people have said to me, "If it's a such a big deal, why haven't I heard about it?" They haven't heard about it because major media has not been giving it the attention needed. I will quote a woman who stood up at a Gasland screening and said, "I read the New York Times every day, why haven't I heard about this before?"

You have done a great service, to your readership, and to all the people across the country who are, right now, suffering from the effects of gas drilling, pipelines, and compressor stations. The stories of those people are posted at Living the Drill, and the damage caused by water and air pollution, constant noise, incessant diesel fumes, massive truck traffic, lost property values, and the stress of not knowing whether this is the morning their water will turn black, has ruined their lives.

Americans need and deserve a fully funded EPA, and they need the Clean Air Act, the Clean Water Act, and the Superfund Act, for the same reasons they have needed them since Love Canal; because corporations cannot be trusted with the public's welfare. Drilling cannot be regulated. New York and America need to ban drilling now.

Please keep up the reporting on this vital topic.

[113.](#) ed berry

new york hudson river

February 27th, 2011

6:59 am

Great article. It is heartening to see a paper like the Times come out with such a hard hitting piece. While some may quibble with bits and pieces, it should be clear to all but the brain dead that this practice of using our limited public water for private gain is a dead end. This should be especially true when we see the poisoning of public water across this great country. Last tuesday in Liberty New York a hard working farmer said it better than anyone I have heard. He was addressing the Delaware River Basin Commission. The topic was Hydro fracking in the Delaware Watershed. I quote, "I have to get back to work on my farm but I have to say that this plan seems to leave the policing and regulating of this drilling to the gas industry. Isn't that like leaving the policing and regulating of prostitution to the pimps."

[114. Carolyn Egeli](#)

Valley Lee, Md.

February 27th, 2011

9:39 am

The hope of natural gas is clean cheap energy. This article demonstrates it is not so clean when you try to retrieve it to use. Once being used it is a lot cleaner than many choices. The problem doesn't look easily solved. I had hope for gas, but these articles have convinced me of its futility, even with the wonderful benefits of gas. We need something and quickly to take the place of oil. Since we need clean water more than fuel, we as humans need to recognize this. We cannot survive without clean drinking water and that is quickly becoming an even hotter commodity than carbon fuel in the world. We have tapped ourselves out and it time to concentrate on sustainability. That's not sexy and doesn't make huge profit for somebody, but it gives us real hope for survival as a human race. We might even have a more pleasant world, scaled to what really makes people happy. Imagine the GDP based on some different criterias! I agree with Tim of Seattle. I think young people are recognizing the need for population control. I am glad for this. We have handed them a mess, and for that, I am truly sorry. More people need to show up at rallies to show support for progressive's ideals. Wisconsin gives me hope. We are our own best hope.

[115. Jo](#)

Pa.

February 27th, 2011

9:39 am

Thanks for helping bring these serious, potentially life threatening concerns out in the open for all to see. We can only hope to prevent damage that is irreversible. Condemned homes/contamination is presently being hidden via non disclosure statements placed on the leased land owners after receiving financial compensation, leaving unsuspecting individuals/families bathing and consuming this water laced with toxins, potentially life threatening chemicals. Little to no oversight or regulation. Special provisions were made exempting The Gas Industry from the clean water act. This alone should send up a red flag. They are not making any more water. They are not making any more air. They are not making any more land. We need to protect it and preserve it from potentially life threatening toxins, not destroy it. Without sufficient, suitable drinking water there is no life. Do we really want to be dependent on water from other counties and purchasing it like you do fuel. It could happen. Then they really would have us. Water is more valuable than fuel. We could survive without fuel. We can not survive without sufficient amounts of suitable drinking water. Unsuspecting individuals who don't reside in areas of natural gas drilling will be consuming these toxins as well via the food they eat, products they use, if manufactured/produced in these areas, and this only touches base on a small portion of the concerns of Natural Gas Drilling/Fracking. The most important, human life and anything/everything else living. Those things that are irreplaceable.

[116. ghoak](#)

Pennsylvania

February 27th, 2011

9:39 am

I live in Schuylkill County, where Chesapeake Energy is threatening to drill. My wife and I run an organic farm and fear that nearby drilling is going to threaten our animals' health and water quality, thus destroying our business and livelihood. Aside from the major wastewater issue, it's important

to understand that even if a well is perfectly fracked and there are no leaks, spills, explosions, or other commonly reported accidents, the process of drilling and fracking a well creates massive air pollution as the toxic compounds gas off into the air. A Texas Mayor actually pulled up his family and left because his child became so sick, apparently suffering nosebleeds because formaldehyde levels in the air were so high thanks to the natural gas industry. And remember, it's not clean at all. A Jan. 2011 analysis updated by a Cornell research team found that natural gas fracking creates more greenhouse gas emissions than even coal, the dirtiest form of energy on earth. That's because the energy-intensive process of getting the gas out of the earth creates fissures that cause methane leaks for years to come. Methane is an extremely potent greenhouse gas--23 times more potent than carbon dioxide. So don't let industry sell you that this is a clean and safe technology. The gas has been there for a long time. We have to ask ourselves, "Why are drillers rushing to install wells now before the EPA can finish its study on fracking's effect on groundwater?" "Why is industry spending millions to remain exempt from virtually all laws designed to protect public health?" Seems like industry knows the process cannot be done safely but I think people are starting to wise up and refuse to be duped by industry yet again. People are fighting back.

[117](#). MaryS447
Windsor, NY
February 27th, 2011
9:39 am

I am very grateful that the NY Times is finally giving the shale gas issue the attention it deserves. Because I live above the Marcellus Shale in NY, I have spent a lot of time over the last three years researching this issue. My research included a trip to Dimock, PA, where the roads are full of drilling traffic, the landscape is full of gas wells and pipelines, and some residents have been left in despair because they no longer have a safe source of water due to drilling.

I am thoroughly convinced that current shale gas extraction technology is not safe, and that shale gas extraction should be banned. The radioactivity issue is just one problem in a long list of problems, including air pollution from wells and compressor stations, 24/7 noise from compressor stations and drilling rigs, various types of water pollution, blowouts and fires at gas wells (the gas wells are often located far too close to inhabited buildings--including schools), and incredibly heavy truck traffic traveling through residential neighborhoods on roads that were not designed for heavy traffic and are routinely used by school buses, bicyclists, people taking walks, etc. The trucks also travel at night, disrupting residents' sleep. Even if best practices were faithfully followed at each drilling site (and they are not), no sane person would expect a good result when entire neighborhoods are converted into huge shale gas factories. And a lot of neighborhoods will suffer this fate if the gas industry gets its way: they would need to drill many, many thousands of wells in the heavily populated Marcellus Shale in order to produce anything like the hoped-for amount of gas.

I am amazed that in this day and age, when we should have learned from the environmental mistakes of the past, the health and safety of so many millions of people are being put at risk by this incredibly dangerous shale gas rush while government regulators--who are supposed to be protecting us--are throwing up their hands in defeat and issuing quotes like that from a PA DEP inspector in the above article:

"If we're too hard on them," the inspector added, "the companies might just stop reporting their mistakes."

Who in their right mind would expect the gas industry to faithfully report all of its mistakes? And if the PA DEP is afraid to be “hard” on the industry, then it doesn’t really matter what the industry reports, does it? Is this supposed to constitute an effective and reassuring regulatory approach?

If the shale gas rush continues, the people of this country, not the gas industry, will be the ones who are asked to bear the human and financial costs, and those costs are likely to be huge.

Thank you, again, NY Times. I hope you will keep up the good work. While you’re at it, you may want to look into two recent studies (one by the EPA, one by a group of scientists at Cornell) that show that when methane leakage over the full life cycle of shale gas is taken into account, the greenhouse gas contributions of shale gas rival those of coal.

[118](#). LarryG

Virginia

February 27th, 2011

9:39 am

Well, the article goes a long way to confirm that there is no silver-bullet, pollution-free fossil fuel, no question about it.

And it makes our lives that depend on fossil fuels even more complex and difficult in trying to understand the consequences of the choices we make.

For instance, we are becoming more and more aware of the air pollution that is generated from vehicles burning refined oil and power plants burning coal - of which mercury deposition is also known to be bio-accumulating in the environment.

So it’s almost like trying to decide which are the least damaging of the necessary evils or if we must reconcile ourselves to a fate where electricity will cost \$400 a month for 1/4 what we use now and vehicles will require the equivalent of \$10 a gallon for whatever fuel they use.

We now are starting to better appreciate that all harvesting of “energy” has consequences whether it be coal, oil, gas, nuclear but even to include the so-called renewables, hydro, wind and even solar.

It’s simply not a question of choosing between which fuels have impacts vs no impacts but which have the lesser impacts after we better understand them individually and can accurately evaluate the actual trade-offs.

What does not help us towards this goal is for each new study to be adopted by some group that then touts that choice as worse than the others or even unacceptable.

That’s what is basically wrong with our collective dialog about these issues now days in that each choice engenders opponents and ultimately there is opposition to all choices - and no solutions, no acceptable compromises, and certainly no support for using 1/3 or 1/4 the energy we use right now per capita while paying 3 or 4 times as much for it as we do right now.

We are sort of boxing ourselves in and like giving a 3 year old 3 choices none of which he likes ...so he just won’t choose.

[119. rangerous](#)

essex, ct

February 27th, 2011

9:39 am

there is no doubt that emissions from this process must be brought to reasonable levels. this is a relatively simple process either through treatment or by pumping the water into spent coal and oil fields. seems pretty simple to me. but the underlying problem is that we simply use too much energy in this country and its use needs to be examined. instead of wasting money of these so called green technologies the government should be spurring home and building insulation. the government needs to better assess the energy drain that is caused by the internet and other communications technologies. should we go back to the past? not really but it is important to realize that in new england you can walk into just about any forest. what is there besides trees? usually a stone wall. why is that stone wall there? because it was used to delineate a growing field. the point is that new england was largely clear cut by the indians and the colonists. the stone walls were made up of the stones pulled from the growing fields and that was the last time we had a carbon neutral society.

[120. drray](#)

marlborough ma

February 27th, 2011

9:39 am

As it stands we in the US depend on the kindhearted generosity of the Saud family to ensure no disruption in the petroleum supply chain takes place. Is that supposed to make anybody feel secure? The Sauds are also responsible for whatever environmental concerns relate to their backyard, so that is not our problem, and our airwaves usually are not polluted with a lot of talk about the environmental consequences of oil production so far away from our range. It is indeed tough that everything we try to do to exploit the carbon combustion technology developed in the west to further the industrial revolution seems so fraught with technological mishaps. It's so hard to dig that coal, and burn that oil without choking ourselves to death, or poisoning our food chain, that it is tempting to just give up. We could convert to a low population migratory society, more dependent on sunlight, and convection, and natural recycling than industrialization, like the Native Americans who lived in balance with nature on the continents, luxuriating in what the lord has provided, before they were discovered by Columbus. But unless we have something better for defense than bows and arrows going for us we can expect to be overwhelmed by the hungry hords on our doorstep, looking for their own piece of the pie, just as happened to the Native Americans. I think all that upheaval going on in North Africa right now is basically about a shortage of food. Otherwise we just have to figure out how to dig that coal, pump that oil, frack that gas, redirect that water flow, collect that sunlight, fission that uranium, and whatever else we can figure out how to do, without so much whining. One possible solution was envisioned in the machine society imagined in the Matrix movies, a bio-electrical energy grid into which all the little embryos, protected in artificial environments, would be plugged, so they can get free internet TV. After all, isn't anything possible?

[121. MargeS](#)

Remsenburg, NY

February 27th, 2011

9:39 am

Thank you Mr. Urbina for writing this article on the polluting effects on our waters from drilling for natural gas. However, I would like to point out the following:

Mr. Urbina reported, “Environmentalists say using natural gas will help slow climate change because it burns more cleanly than coal and oil. Lawmakers hail the gas as a source of jobs. They also see it as a way to wean the United States from its dependency on other countries for oil.”

On the other hand, on January 26, 2011, Robert Howarth a professor of ecology and environmental biology at Cornell University issued a report on the “Greenhouse Gas Footprint of Natural Gas from Shale Formations Obtained by High-Volume, Slick-Water Hydraulic Fracturing.” Professor Howarth noted in a report dating from November 2010, the EPA “concludes that emissions – particularly for shale gas – are larger than previous believed.” Further in his January report, Professor Howarth writes, “The footprint for shale gas is greater than that for conventional gas or oil when viewed on any time frame, particularly so over 20 years. Compared to coal, the footprint of shale gas is 1.2 to 2.1 fold greater on the 20 year time frame...” Therefore, it seems that shale gas is not significantly better than coal environmentally.

As for a “source of jobs and as a way to wean the United States from its dependency on other countries for oil,” Jacobson, M.Z. and Delucchi, M.A. wrote carefully researched well referenced articles late last year entitled “Providing all global energy with wind, water and solar power, Part I and II:” (Cited: Technologies energy resources, quantities and areas of infrastructure and materials. Energy Policy (2010), doi: 10.1016/j. enpol. 2010.11.040)

Mr. Jacobson is at Stanford University and Mr. Delucchi is at University of California at Davis. They wrote, “The obstacles to realizing this transformation of the energy sector (to Wind, water and solar) are primarily social and political, not technological.” They noted that we had made these sweeping technological changes before during WWII, the Interstate Highway System and the Apollo Program for example. They believe through their careful analysis that “complete transformation of the energy system is not, in itself, an insurmountable barrier.” Imagine the creation of jobs in building a new energy structure tomorrow and imagine through insulation and installing more efficient systems the jobs that can be created today. None of this will endanger our environment, air or water. We have a healthy alternative.

Lastly, I congratulate Mr. Urbina for pointing out the grave threat to our water sources through Hydraulic Fracturing. I would like to add that even according to Chesapeake Energy, each well has a short production life. The Initial Production(IP) is high but only for 2 or 3 years by 5 years the well has lost at least 80% of its productive capacity: therefore many thousands of wells must be drilled using this method only increasing the dangers to our water sources, rivers, and streams as Mr. Urbina so carefully reported. The United Nations has stated that clean water is a human right.

[122](#). Steve
Rochester, NY
February 27th, 2011
9:39 am

We have moved so far towards pro-business that we’ve forgotten what made America such a beautiful country. Since 1980, every year has been a further shift towards corporate rule and further away from “We the People”. Politicians are now bribed to vote as the corporations want them to, in fact, many of the laws are written by the lobbyists from the corporations who benefit most. We have a choice to make in this country. Do we allow companies to be evil, as many of them are - and how do you call them anything other than that when profit is more important than lives? Or we have the

choice to find a better balance where profit isn't the sole driver of a company's motives. The final era of dirty energy is upon us, and this is clearly evident in the eyes of the corporations (who, by the way, are richer than any companies in the entire history of the world). This is why they drill for oil in deeper water off the gulf coast. This is why Hydro-Fracking is being used - as the easily obtained natural gas is depleted; and this is why mountain top removal is being used in our once-beautiful blue-mountain states. These companies treat the American populace as a bunch of suckers. And until we decide to invest in green technology to move our economy forward, we will continue to be suckers. Green technology has the promise to reduce the pollution that causes premature death to thousands of Americans due to lung related health issues. Green technology has the promise to provide millions of new jobs in exciting technology that hasn't even been invented yet. Green technology can move our country forward truly into the 21st century and move us away from the dirty, evil motives of the 19th and 20th century energy technologies.

Sadly, after all the oil, coal, and natural gas has been extracted and the earth has been raped, these same companies will pay off the politicians to provide tax incentives so these same companies can finally create the green energy that we need now, and reap the reward of green energy, but it will be too late.

[123](#). Joe Levine

Milanville, PA and Brooklyn, NY

February 27th, 2011

9:39 am

It was about 3 years ago that the shale gas fracking industry came into north eastern PA and began leasing huge acreage from unsuspecting farmers and landowners promising fists full of cash so they could drill for gas on their property. In partnership with PADEP they began a sinister campaign to extract gas from the Marcellus shale formation. They promised prosperity and jobs, but didn't say they would contaminate the water and pollute the air and industrialize the agricultural landscape. In fact they publicly denied the use of chemicals and insisted the process of slickwater, high volume, hydro fracking utilized only water, sand and soap. They didn't mention over 750 chemicals, the majority being extremely toxic, carcinogenic and mutagenic that have been discovered to be employed in the drilling and fracking activities.

Unfortunately one didn't have to look further than our own backyard to see the damage already being done in the western parts of PA, where this activity was already taking place for the last few years. Something further west where this began in Texas, New Mexico, Colorado and Wyoming. There, a record was developing of accidents, spills, explosions, illegal dumping of toxic wastewater, and contamination and illness. When drilling commenced and landowners water was contaminated it was considered nothing more than a coincidence. You couldn't prove they did it because you couldn't prove that the diesel or benzene or acrylonitrile mysteriously found in your water was from their work. Exemptions given to the industry in the 2005 Energy Policy Act which resulted from the Cheney energy task force provided cover for the industry to poison as they please.

But along the pristine stretches of the magnificent Delaware River, a federally designated Wild and Scenic River and National Park supplying water to 5% of the US, they haven't begun drilling yet. A grassroots public outcry against fracking in this river basin has led to a moratorium that few other regions have been able to achieve. That's because this watershed is governed by a multi-state and federal government agency called the Delaware River Basin Commission (DRBC). The Special Protection Waters designation required more extensive review.

Unfortunately under political pressure from PA Governor Tom Corbet along with NJ Governor

Chris Christie, the Commission is about to cave in and release regulations that would allow this intrinsically contaminating activity to take place in one of the nations most protected watersheds. By the way, this is also part of the NYC Watershed.

On March 2nd in West Trenton at the DRBC Headquarters there is a Public Hearing. Show up and demand that shale gas fracking is banned until a comprehensive study is performed that proves it can be done safely. Do the same everywhere else that shale gas fracking is proposed. Natural gas does burn cleaner but it is as polluting as oil or coal when the extraction processes are calculated in the equation. Shale gas fracking must be banned because it is intrinsically contaminating. Shale gas is not a viable transition fuel, it is a fossil fuel – a stab in the back to green energy. If we spend the Trillions to build the infrastructure required for the shale gas industry we will not be able to invest in a green energy future.

On March 1st, the NYC Council is holding a hearing on shale gas fracking. Please attend and support a ban.

Joe Levine

NYH2O

<http://www.nyh2o.org>

DamascusCitizens

<http://www.damascuscitizens.org>

124. Larry

Berwyn, PA

February 27th, 2011

9:39 am

Very good article and objective too!

I have heard a lot about Nat Gas extraction process but never really understood how it worked.

While the risks are real, it seems that with some effort that they can be overcome. We need to get energy from somewhere.

I would rather deal with the risks of Nat Gas Extraction than creating nuclear waste from a power plant, or getting oil from the Middle East.

For every action there is a reaction. Buy Oil from the Middle East and we fund terrorists and dictators who have no interest in protecting the environment. If we burn coal, we have a lot but with more carbon and environmental risks to extract the coal. Build nuclear and we accumulate radioactive waste.

Another question is just how much Nat gas do we need to be energy independent. T. Boone Pickens claims that if we convert the truck fleet to Nat gas, that would be enough to eliminate our oil imports. Do we really need hundreds of thousands of wells to hit that goal? Fewer wells mean less environmental issues.

[125. coolercash](#)

Florida

February 27th, 2011

9:39 am

While natural gas is definitely better than oil or coal. It is still the wrong direction. If we allow this to continue, we will still be dependent on a resource that is not limitless... People need to start realizing that solar power, wind power, and water power is the way to go.

I have been trying very hard to get my energy usage to a minimum. I switched to energy select, and this helps lower our bill. We unplug all appliances when not in use. We have hand cranked flashlights, no batteries needed. We have the timer on our water heater, and have it set to turn on twice a day, which we use to wash dishes, and shower. We literally cut out \$100 during the coldest month of the year. We also use blankets, and space heaters to keep the room warm, instead of heating the entire house. People need to realize resources have limits.

What I would love to see is houses built with dual power options, a solar power unit, with electricity available if power cells depleted. Cars that have solar panels on the roof, with gas as an option, also when power cells depleted. These are available, but since people want cheap and easy, it is not being made readily available. Once it is more widely used, it will get cheaper.

Wake up and realize that we need to change!!!

[126. thislandisourland](#)

CA

February 27th, 2011

9:39 am

For those who are as outraged about this as I am, I want to let you know that during the Oscars tomorrow, I and other Gasland supporters are organizing viewing parties and sending this letter and email. Our goal is to send 50,000 letters to President Obama. Please feel free to use this as a template and send it at: <http://www.whitehouse.gov/contact> or mail your letter directly to the White House.

Dear President Obama:

I am writing to you today to express my deep concern regarding the threat caused by Hydraulic Fracturing to the environment and to the health and well being of the citizens of the United States of America.

Hydraulic Fracturing is a new, unsafe method of drilling for natural gas that injects millions of gallons of toxic fluids and synthetic petroleum based drilling mud directly into and under drinking water aquifers. Thousands of documented water contamination cases across the country point to a massive failure to protect public health over the last five years in the midst of the largest onshore natural gas drilling campaign in US History.

There has been an inadequate amount of study investigating the impact on either the environment or the tens of thousands of families that are living amidst roughly 450,000 gas wells across 34 states.

I am grateful to know that the EPA has begun an initial study to examine Hydraulic Fracturing but in light of the fact that this study will not be completed until 2012, I continue to be fearful of the ongoing effects of what is largely an ungoverned and potentially perilous practice.

In your April 2008 address in Scranton, PA, you stated that you believed Hydraulic Fracturing should be subject to the Safe Drinking Water Act. Therefore, we will expect your full support for passage of the FRAC Act, which would re-regulate the process of Hydraulic Fracturing under the Safe Drinking Water Act.

Finally, on behalf of myself, my family and my fellow citizens I respectfully call upon you, your administration and the Congress of the United States to impose an immediate moratorium on the practice of hydraulic fracturing across the United States until such time as these practices have been unequivocally proven to pose no threat to the environment or the citizens of the United States of America.

Sincerely,

[127.](#) Dale Sherman
Syracuse, NY
February 27th, 2011
9:39 am

We've been concerned for years that terrorists might set off a dirty bomb and spread radiation throughout a city or pollute a reservoir or city's water supply. Well, it's happening now, only it's U.S. energy cartels that are dumping radioactive dirty bombs into our water supplies on a daily basis. This is beyond criminal, it is a sanctioned assault on our rights to basic human needs. If we can't extract resources safely, then we don't have a right to it. Leave it where it is, perhaps our kids or grand-kids will figure out how to extract it safely; and they will have a much greater need for that energy than we do now.

We also need to implement efficiency on a grand scale so that the 15 year estimated supply of natural gas will last 100 years or more. Remove the EPA exemptions for gas companies and make them pay into the Superfund to cover these catastrophies, we'll need it very soon.

[128.](#) Jerry Silberman
Philadelphia, PA
February 27th, 2011
9:39 am

Bravo to a basically sound and courageous piece of journalism in the public interest. The corruption of individuals like my governor, Tom Corbett, who has accepted 30 pieces of silver in exchange for the health and future of Pennsylvania for many lifetimes is fully exposed. It's now up to the citizens of Philadelphia to stop this madness.

One comment at the beginning of the article, is however, incorrect. The notion that we can supply the US for 100 years with this energy is profoundly incorrect, and comes under the heading of gas driller spin.

Apart from the fact that the exploitation of this "resource" would poison our water and air, and interfere with raising the food that we would need, the net energy consumption to withdraw the gas is extremely high, and in general these wells play out in a decade or less. There is no simple correlation between the volume of trapped gas and our ability to draw it out.

[129.](#) Bob Bell
Mount Pleasant, S.C.
February 27th, 2011
9:39 am

Growing up in the outskirts of Cincinnati Ohio in the 1950s my grandfather used to take my squirrel hunting; as a young boy from Eastern Kentucky he had learned to hunt and was a natural outdoorsman. A farmer who owned a great deal of land, some of it still heavily wooded allowed Grandpa to hunt on his land and on many a Saturday I would trudge behind Grandpa as we stalked the elusive southern Ohio squirrel population. Grandpa took along with him two old sack cloth bags tied to his belt. In the one he would place the squirrels he shot; in the other he would place trash and whatever else he found out of place on our hunt; when I asked him why he was picking up cans and old newspaper (remember this was the day before recycling and the environmental movements) he gave me some old fashioned country wisdom: “robbie, not even a fox fouls its own nest.” I have been a self taught environmentalist ever since he taught me to honor the environment.

Today we are fouling our own nests at an alarming rate. In a perfect world, man would clean up after himself and leave behind the same environment he lives in; obviously, this is not a perfect world and modern man requires some assistance and regulation by other authorities to protect and preserve what nature has given us. Do we have the common sense and good old fashioned down home wisdom to discipline ourselves? So far the answer is an emphatic “no.”

[130.](#) KraftPaper
USA
February 27th, 2011
9:39 am

It only took two years since this story broke for the Times to air it. I don't know why it wasn't reported that Cheney as VP made a special deal so that exemptions were written into the law so the E&P drillers like Haliburton were exempted from EPA laws. Another reminder that the outcries to abolish the EPA, however well intentioned by economic reasons is short sighted and most likely inspired by misguided patriotism. At the very least the association of a former CEO with an exemption should have raised red flags at the time of its passage. No democrats were screaming bloody murder. No one in the congress raised their voice of concern. But when the price of oil goes up we hear the chorus recite the lines drill baby drill in unison. There's a smart way to do things and we just can't figure out what it is. We are short term deliverers. Let the bottom line yield to smart returns and we'd be all right. The power of the energy industry is so deep in this country that it may never change until the well runs dry.

[131.](#) [unreceivedogma](#)
New York City, NY
February 27th, 2011
9:39 am

1-I have been working as a concerned citizen activist on this issue for nearly 3 years. I remember the very first article I saw in the NYTs swallowed industry spin whole with a “Der's Gold in Dem Der Hills!” kind of headline. Subsequent articles have been marginally better. This article is the FIRST substantive one I have seen. Having said that: Hallelujah!!! About time, and the timing couldn't be better, what with the PA governor already showing himself to be in such a hurry to strip the state of what few protections its citizens have against this industry even before he breaks in his

new office.

2-It is way past time to put the burden of proof where it belongs: on industry, to demonstrate that this can be done safely 99.999999999% of the time. If only this industry was even subjected to the same regulatory standards as the pharmaceutical industry. We need credible, scientific studies. Until then, high volume slickwater hydrofracking (HVSWHF) should be banned.

3-Natural gas is being touted as a transition fuel. What industry really has in mind is to make it a replacement fuel. It is reported that this fuel - when extraction, processing, transportation as well as consumption is taken into account - is as bad for climate change as coal.

4-Even then it is still argued that natural gas is possibly a necessary compromise because technological advancements won't get us to real renewables fast enough. Since Spain already gets over 50% of its energy needs from wind, it seems what may be preventing us from moving as quickly is more likely a failure of political vision and leadership.

5-Go Gasland!

[132.](#) Chris

NYC

February 27th, 2011

9:39 am

Gas production is much cleaner than nuclear, oil sands, coal, corn base ethanol and other sources. Our society uses large quantities of energy and they are large scale projects to provide them. Each one of these drilling pads produces enough gas in a year to heat 68,000 homes in the cold northeast.

Gas should be produced with environment safeguards. Alternatives to gas production have challenges also. Wind turbines are a danger to birds and to boats that are offshore. Solar is very expensive and not what the public is willing to pay for in government subsidies.

Good discussion.

[133.](#) likeitisjimbo

NYC

February 27th, 2011

9:39 am

Cup of benzene anyone? A decade of hydrofracturing has radium beyond regulated levels. What will happen after a century? Nuclear power is cheaper than fossil fuels. The problem of heavy waste by products is solved by building one massive fusion reactor to dispose of waste. Small rod electricity generation facilities can reach remote areas. We have not built a new plant in decades and ground has yet to be broken on one of the 20 promised by Obama. Nuclear power plants pay for themselves in less than 2 decades, meaning the remaining life can actually pay down our debt and money can be printed to pay for them amortizing the payback. As long as the Koch bros. and Exxons buy our politicians, don't expect any drastic needed change.

[134. CD](#)

NYC

February 27th, 2011

9:39 am

Looking at the big picture, why are we surprised? The criminal Bush administration distracted much of America from these issues with an illegal war. Cheney's 'energy task force' was basically the industry agenda. Regulation, inspection, oversight, innovation, vision, were consistently trumped by 'If it ain't broke don't fix it'. Go further back, to the 70's. The auto industry declared that it would cost too many jobs to produce more efficient vehicles. Is that the new math? The new 'gilded age' is under way. The Republicans decry 'job killing regulations' as they champion laissez faire.

Fast forward. Massey and BP. Obama never connected them as similar symptoms of the same disease, and Massey fell into the shadows behind the glaring light on the gulf. An opportunity for a 'learning moment' was squandered. Remind Americans of the original 'gilded age' and what it created. Unions, clean air, workplace safety, child labor The list goes on, and many people consider these hard fought advances simply part of the landscape, but they can go away. Fracking is merely one of many symptoms.

We need more and more energy, but we are still not willing to live simpler and smarter. And right now we need jobs. Fracking promises a quick and relatively cheap fix to our energy needs while creating jobs. Sounds good.

[135. unreceivedogma](#)

New York City, NY

February 27th, 2011

9:39 am

re:#37 BR: Please, get real.

1-I have been working as a concerned citizen activist on this issue for nearly 3 years. I remember the very first article I saw in the NYTs swallowed industry spin whole with a "Der's Gold in Dem Der Hills!" kind of headline. Subsequent articles have been marginally better. This article is the FIRST substantive one I have seen. Having said that: Hallelujah!!! About time, and the timing couldn't be better, what with the PA governor already showing himself to be in such a hurry to strip the state of what few protections its citizens have against this industry even before he breaks in his new office.

2-It is way past time to put the burden of proof where it belongs: on industry, to demonstrate that this can be done safely 99.99999999% of the time. If only this industry was even subjected to the same regulatory standards as the pharmaceutical industry. We need credible, scientific studies. Until then, high volume slickwater hydrofracking (HVSWHF) should be banned.

3-Natural gas is being touted as a transition fuel. What industry really has in mind is to make it a replacement fuel. It is reported that this fuel - when extraction, processing, transportation as well as consumption is taken into account - is as bad for climate change as coal.

4-Even then it is still argued that natural gas is possibly a necessary compromise because technological advancements won't get us to real renewables fast enough. Since Spain already gets over 50% of its energy needs from wind, it seems what may be preventing us from moving as

quickly is more likely a failure of political vision and leadership.

5-Go Gasland!

[136.](#) gk57

Hong Kong

February 27th, 2011

9:39 am

The fracturing problems have been known for some time now. An energy paradigm shift is needed. Free energy technology is available. Cars can run on water - but the technology has been suppressed. It is time Govt to work on legislation that will bring true innovation in the energy front - there needs to be serious open discussions on all available avenues - not just wind and solar, but hydrogen, geothermal, nuclear - that is not fear based - that has no unnecessary interventions from any security organizations. Energy must be FREE - and then watch the economy recover. We are being held prisoner by the hydrocarbon energy suppliers of which there are only 5 major players in the world.

[137.](#) Barbara Sorrenson

Ithaca, NY

February 27th, 2011

9:39 am

@BarryNY #37. Yours posting epitomizes the standard industry response to this issue, which is taught professionally to PR professionals working the energy industry's dark side by experienced veterans from the nuclear industry. The whole approach is based upon cognitive dissonance, or translated, "how to get people to act against their own best self-interest." The argument goes like this:

1. It's bad, but fighting it won't make it better only cooperation will.
2. It's going to happen anyway.
3. It will wind up benefiting you even though exactly how seems dubious.
4. Trust me.

As the sign said: "Work sets you free." Now where have we seen that before?

jwp from NY says what needs to be said, the campaigns against the EPA, the right to public unions having collective bargaining contract representation, and against planned parenthood, are linked, they are a 'conspiracy' and they are orchestrated. The finger points squarely at Charles Koch and his recently spoofed brother David, and there needs to be a congressional investigation into their cynical manipulation and gaming of American Democracy in the name of turning this into their private banana republic of environmental despoilation. Is that alarmist? No. Saying there's an 'oil crisis' when 1.9% of the world's oil supply is being impacted at all by political events in Libya and Egypt is alarmist, when Saudi Arabia controls 9.2% of the world's reserves and 40% of the delivery capability of which only 65% is currently being released. Oh, I read that in the 'liberal press' PR Oil Flacks will be paid to post. Sure, it's in this week's Bloomberg Businessweek pp11- 13. Barbara Sorrenson, PHD, Ithaca, NY.

[138.](#) Tom

Europe

February 27th, 2011

9:39 am

This is a really important story at a key moment in energy decision making not just in the US but across the world. Eastern Europe is about to start on its shale gas extravaganza, and once again we see the one eyed man focused on the quick buck leading the blind policy makers with promises of jobs and “a little less Co2”. Gas has a very important role in bringing down our emissions over the next 20-30 years, but its not a solution and we must not let it happen at the expense of ever more degradation of our finite natural resources.

[139.](#) Dissenta

Honesdale PA

February 27th, 2011

9:45 am

“Air pollution caused by natural-gas drilling is a growing threat, too.” Yes, absolutely true and much neglected in the debate. So it’s unconscionable that gas industry lacky PA’s Gov Corbett, whose recent election was virtually paid for by the gas industry, has just exempted gas drilling emissions from air pollution monitoring in a blatantly corrupted action in his governorship.

Rise up, people! Resist! Unless we do, this railroad job is going to ruin not just our environment, our drinking water, our human and animal health -- but our democracy!

If the Cheney administration had not pressed its fat thumb on the scale to have gas fracking exempted from the Safe Drinking Water Act in 2005 (because it threatened drinking water), it would be illegal today. Let’s un-exempt shale gas fracking from SDWA by passing the FRAC Act, illegalize unconventional hydrofracking, and get on with the moon shot to renewable energy using conventionally produced natural gas for as short a period as possible to help make the transition, not as a “bridge fuel” but like one of those temporary spare tires designed to get you to the gas station but not an inch further.

[140.](#) Patrick Ryan

Brooklyn, NY

February 27th, 2011

9:45 am

President Obama needs to stand up to the oil and gas industry on this clearly harmful and risky drilling technique. He can begin by using the federal government’s vote in the Delaware River Basin Commission to deny any hydrofracking in the Delaware River watershed until a cumulative impact study on the effects of hydrofracturing is completed. His administration can be behind domestic drilling, but it must be done responsibly and with the utmost care and consideration-- aren’t these Obama’s defining characteristics after all? Why are they absent on this hugely consequential issue?

[141. AMK](#)

Albany, NY

February 27th, 2011

9:45 am

I don't suppose the drilling companies have to deal with the contaminated water when they go back home. One could only hope legislation requiring bringing any water used back to the condition it was before it went down the well is ethical. More important, it is doable especially considering the mobile Reverse Osmosis clean water technology out there. No it isn't cheap but we should not be looking for the short cheap solutions if they cause other worse environmental impacts. Need to include the impact remediation into the cost of the activity, then consider is it worth it.

[142. kay](#)

salt lake city

February 27th, 2011

9:45 am

It seems to me that coal, oil and natural gas are going to be a part of our lives for many years, probably until something now unheard of is discovered to produce energy in the levels the 7 billion plus people are going to need in the future.

There must be another way to "fract" wells? I am no scientist, but doesn't sound break things up? Or some other method besides using our precious water? I live in the west and water is becoming like gold, and mining and oil are like gold too.

[143. Jerry](#)

St. Louis

February 27th, 2011

9:45 am

When it gets right down to the crux of the matter; all energy sources, short of the sun, are in one way or the other polluters of the environment.

Our real dilemma is that we use far too much energy to support our high standard of living. No politician is going to tell the people that vote for them they have to tone it down a notch or two, by not driving so much, or turning down the thermostat.

We the people are the bottom line polluters, but we don't want to look in the mirror to find the culprits.

[144. Jerath](#)

Atlanta, GA

February 27th, 2011

9:45 am

No doubt these gas companies drilling for natural gas are just duplicating the same menace as did the oil companies earlier in the hey days of oil boom in this nation, and the strip and hydro mining for gold and other precious minerals.

Under most republican administrations the the status quo has been either deregulate or ignore the existing regulation concerning dumping of toxic waste products that pollutes the ground water, air and soil. Then on top of it all is price fixing and commodities speculation by the greed creed.

[145.](#) mr.independent

MA

February 27th, 2011

9:45 am

So lets see, our nation will have about 100 years of natural gas for energy consumption but the water table will be compromised. Plenty of energy and a lot of sick and dieing people living in contaminated wastelands. Well have energy but no drinking water. Sounds like a plan.

Thanks for a good article showing how corporations can not be trusted to do the right thing. Also it's interesting how the republicans want to remove funding for the EPA and thus hampering it's ability to do anything to protect the public.

[146.](#) Areg

Boston

February 27th, 2011

9:45 am

Radiation levels 1500x higher than the federal limit for drinking water. Wow...except that nobody is actually going to drink undiluted raw drilling waste. So tell me again what's the relevance of these comparisons? Because I have a better idea: let's take the radioactivity in the nuclear reactor coolant -- 1bln times higher than the drinking limit -- and then use that to start a mass hysteria.

If NYT really wants to do a rigorous investigation, then it should directly measure (or have someone do) the radiation/toxicity levels in the actual drinking water, rather than speculate about the impact of drilling waste on public health. To be clear -- I am not saying that the gas industry is playing it safe, I am just saying that the provided evidence is not proving the contrary.

[147.](#) adv

Williamsport, PA

February 27th, 2011

9:45 am

Pennsylvania, from the gas drillers' point of view, is less like Saudi Arabia than Nigeria. They think of it as a hinterland where the people are easily fooled by carrot and stick tactics, and politicians are cheaply bought. So far, they've been more right than wrong. Thanks to the Times and its reporters for this excellent article, clearly the result of a lot of work. In fact, natural gas is not that "clean." The energy and environmental costs of extraction may outweigh the advantages. If the money and effort that are being put into gas drilling were invested in renewable energy, Pennsylvania would be the cleanest state in the Union, with a strong economy.

[148.](#) Barbara Rubin

Ca.

February 27th, 2011

9:45 am

Key quotes:

"Like most of the sewage treatment plant operators interviewed, Mr. McCurdy said his plant was not equipped to remove radioactive material and was not required to test for it." and ""If we're too

hard on them,” the inspector added, “the companies might just stop reporting their mistakes.”

Once again, the pollution plaguing our nation is reduced to the concept that chemicals, known to be incompatible with human biochemistry, are worth any risk as long as jobs are offered by the offending industry. No one appears to recognize that workers are immediately divorced from their jobs by occupationally related illness and succumb to bankruptcy as illnesses strike family members living in such environs. However, there is no gain to be had in arguing environmental hazards away from those environments. Does anyone expect a board of directors to admit potential liability?

Our health statistics speak for themselves. It is time to problem-solve issues of pollution ‘inductively’, extrapolating from the specific to the general. Testing the individual homes of the sick for levels of suspected toxicants will reveal both the degree of chemical trespass long denied by polluters. It will also offer physicians and researchers the data needed to make the associations between symptoms and contaminants. Why pose questions outside of the specific settings of concern—our homes, schools and offices? It is no accident that in 2008, the New York City Council proposed a ban on home testing for contaminants without a police permit. The findings of citizens engaged in uncovering their own dangers is greatly feared by industries and governmental agencies.

Let’s make it a routine occurrence through the development of an industry devoted to indoor air quality assessment. Questions about actual environmental impacts upon individual can then be answered, leading to responsible policies and regulations. Perhaps we can then reduce the health care costs currently crippling our economy.

Barbara Rubin

www.armchairactivist.us

149. Nicholas Newgarden

Chicago

February 27th, 2011

9:45 am

I can’t believe the NYTimes would take the trouble to do this “research” and then fail to state some of the most disturbing facts concerning this practice.

First, the natural gas mafia has been exempted from the Clean Air and Water acts, and the Obama administration has done nothing to change this.

Second, the toxic slurry of chemicals involved is considered a “trade secret” or proprietary information; in other words, they are not required to disclose to anyone, EPA included, just what they are injecting into the water table or dumping into streams and rivers. Again, the Obama administration has not moved to change the rules of this rigged, carcinogenic game.

Third, the Times fails to mention that there is a glut of natural gas currently, and Americans are dying so that companies like Chesapeake Energy can export their ill-gotten product overseas.

It all comes back to leadership or lack thereof. One has to wonder if Mr. Obama would be as impotent or blind on this issue if Pennsylvania were his home state. If this were occurring in Hawaii, would he be outraged? Is he somehow out of the loop on this? The Times seems to have no trouble editorializing when it comes to the budget and right/left shenanigans, but why the reluctance

to call the president out directly on this? Healthy water and soil transcend partisan politics, and the toxic buck stops at Pennsylvania Avenue.

What a shame.

[150.](#) MGrimaldi

Livingston Manor, NY

February 27th, 2011

9:45 am

Thank you for this timely but overdue analysis of the aggressive advances of this polluting industry on the northeast. Until the cumulative impacts of these industry pollutants on water, air, health and property values are assessed further drilling must be suspended. Let the industry bucks stop here at the Delaware River Basin, New York City Watershed and the Catskill Forest Preserve. Grasping at the straw of gas drilling to solve the problems of an ailing economy (especially in leasing farmland) to gas drilling is truly like “burning the furniture to heat the house.” Let’s pretend that there is no gas beneath the earth and find a better solution.

[151.](#) nvlheum

Virginia

February 27th, 2011

9:45 am

There seems no end to the Times’ clarion call for government regulations that cripple or make impossible this country’s urgent need to develop its own energy. Please note: no reputable source believes that the United States can exceed 20 percent green energy in the next fifty years, even if we outlaw fossil fuels. You would at least think the Times approves of clean gas as a source for now. But no, they must do everything to stop all fossil fuels, jack up the price artificially, and subsidize Al Gore’s scheme and other bogus pipe dreams of windmills and solar panels. The latter are good, but will never come close to meeting our energy needs.

[152.](#) Avid

Kentucky

February 27th, 2011

9:45 am

Thanks for a great article, keep hammering away on this subject. Allowing any industry to police itself is allowing the foxes to guard the henhouse. Allowing those same industries to buy their government officials equivocates to letting those foxes to steal the hens and the eggs along with the henhouse. Industry will only serve itself and does not care what happens to the citizenry. As someone now famous once said, “Follow the money.” Unfortunately the Citizens United decision has allowed industry and corporations to buy our entire government. What a tragedy. Someday we will be saying, “I remember back when we had a democracy....”

[153.](#) Clyde Wynant
Pittsburgh, PA
February 27th, 2011
9:45 am

When we elected President Obama, we Democrats expected he might actually behave like one of us and go after the rapacious corporations in this nation, who will despoil our air and water without a thought. But, as this reporting shows, his EPA stood on the sidelines, just like, I suspect, George Bush's would have.

And it's not like "fracking" is some obscure event that is happening behind the scenes. Companies like Range Resources are spending millions on warm and fussy billboards and TV commercials in my state of Pennsylvania, in an attempt to prove what model citizens they truly are and to put a rosy glow on their drilling activities. Little did any of us know that the glow would come from ingesting liquid radium....

[154.](#) Ernest
doylestown, pa
February 27th, 2011
9:45 am

Hydraulic Fracturing is it self the danger. The process explodes the shell releasing the gas. As the shell explodes it causes tiny cracks in the earth. Thereby causing gas to escape upward into drinking water and fields. In other words the gas can not be controlled. Some gas is captured and some escapes upward into the earth. The land itself is turned into a toilet - to continue this process is to tun Pennsylvania into a wast land. Property values will go down - who would want to live in Pennsylvania.

[155.](#) bnc
Lowell, MA
February 27th, 2011
9:45 am

Please note that billionaires like the Koch brothers are complicit in these crimes and are subsequently polluting our governments with "libertarian" propaganda to further reduce our ability to monitor these crimes.

The coal, oil and gas industry associations are furthermore spreading only the positive aspect of gas exploration.

"Clean coal"? "Clean gas"? "Clean oil?"

With the cost of health care soaring, can we afford to continue paying more billions for illness we know we can prevent?

[156. MargeS](#)
Remsenburg, NY
February 27th, 2011
9:45 am

Thank you Mr. Urbina for writing this article on the polluting effects on our waters from drilling for natural gas.

I congratulate Mr. Urbina for pointing out the grave threat to our water sources through Hydraulic Fracturing. I would like to add that even according to Chesapeake Energy, each well has a short production life. The Initial Production(IP) is high but only for 2 or 3 years by 5 years the well has lost at least 80% of its productive capacity: therefore many thousands of wells must be drilled using this method only increasing the dangers to our water sources, rivers, and streams as Mr. Urbina so carefully reported. The rural landscape of Pennsylvania and New York can well become a huge industrial site. The United Nations has stated that clean water is a human right.

[157. Terry McKenna](#)
Dover NJ
February 27th, 2011
9:45 am

This problem has been brought up by a number of sources, though not with as much information as this excellent article, but so far there has been no clamor to do anything. And advocates from the gas drillers continue to pretend that nothing is wrong.

We may think that we need oil and gas, but for most of the year, we can live without a heat source. we can't live a week without water.

[158. Bob](#)
Bellaire, Ohio
February 27th, 2011
9:45 am

We think of ourselves as an "intelligent" species, yet we use this intelligence to contaminate our life giving resources for the sake of "life enhancing" resources. No amount of fossil fuels can substitute for the life giving benefits of clean water, none. Place 2 people in separate rooms giving one person an unlimited supply of water and the other and an unlimited supply of crude oil to the other; who lives longer?

[159. Ellen](#)
Williamsburg
February 27th, 2011
9:45 am

We are killing ourselves, our children and the future in a short-sighted rush to get every last bit of fuel from the earth, no matter the consequences, no matter the pollution, no matter the threat to health.

Then what?

That future is now - and whatever solutions we come to, they must be life-supporting or we are all totally sunk.

[160.](#) Eric

New Jersey

February 27th, 2011

9:45 am

“Industry officials say they are not concerned.” What a relief! Sources at Triana Energy, Marcellus Shale Coalition, Energy in Depth, Shell, Chesapeake Energy, the Bureau of Radiation Protection in Pennsylvania, Ridgway Borough’s public sewage treatment plant in Elk County, and the office of PA governor Tom Corbett -- speaking anonymously “because of the delicate nature of the situation” -- have indicated that these corporations, as well as the governor’s office, have “ceased purchase and consumption of bottled water” and are now “taking steps to direct the flow of waste water directly to their offices and home,s in order to mitigate public perception of the dangers of drinking ‘so-called toxic water.’“

[161.](#) SS

St. Louis, MO

February 27th, 2011

9:45 am

[“I’m not an activist, an alarmist, a Democrat, environmentalist or anything like that,” Ms. Gant said. “I’m just a person who isn’t able to manage the health of my family because of all this drilling.”]

Am I the only one who finds this statement odd? This lady lumps democrats and environmentalists with alarmists, and in the same breath complains about the ill effects on her children from unregulated drilling! Sorry, but if you vote for the party of de-regulation and label those who disagree as alarmists, then you can’t complain about the problems created. We get exactly the government we deserve.

[162.](#) RB

NY

February 27th, 2011

9:45 am

How about marine life -- a whole different subject than Drinking Water.

Some means must be created to activate the constituency of conscientious citizens who read reports such as this -- for instance holding a Meet the Reporter conference -- paid of course -- where people can network and get organized. I read these inspired comments, sometimes in the thousands, and a week later they’re erased.... People must find a way to act. What can one do now -- visit the Sierra Club or Union of Scientists website -- there must be a better way. I for one am contacting the PA governor. Water + Air. Gasland indeed.

[163.](#) Donald Fleck

NYC

February 27th, 2011

9:45 am

The revenues of the industry need comparison to the costs of safely treating the discharge, and of removing the pollution. Some industries are so profit-oriented that they resist spending small amounts of their revenues on expenses, if they can manage it.

164. HIGHLIGHT (what's this?)

Engineer

Midland, TX

February 27th, 2011

9:54 am

As an engineer who works for an energy company, I agree that the water coming out of the sewage plants should be tested and we should know what the radioactivity of that water is, and the radioactivity of the drinking water supplied to the cities should be tested as well. I can't believe the environmental agencies in Penn. have not done that already. There are a few things to consider that the author didn't make clear.

First, water used in the hydrofracing process is not packed full of chemicals as, some would have you believe, and there are typically no radioactive materials added to the fluids as they are injected. The salts and radioactive material found in the water that is produced from gas wells is coming from the rock formation below ground. That is why the radioactive are called NORM (naturally occurring radioactive material). So energy companies are not putting the radioactive material down there like the article leads people to believe.

Second, most states do not allow discharge of produced water from oil/natural gas wells period. That water is all treated before being discharged or is injected back underground into hydrocarbon bearing formations that are far below drinking water aquifers. I don't know why Penn. has not made the industry do the same as other states, especially without knowing the levels of radiation in the waterways. Shame on the environmental agencies. The energy companies are not responsible to test the produced water at all the places it could go to after it goes into the sewage treatment plant.

Third, as for gas getting into aquifers, as long as a well is drilled, cemented, and hydrofractured correctly there is no way for natural gas molecules to get into a water aquifer. I don't know the state in Penn., but there is typically two strings of pipe and two cement barriers between an aquifer and the formation producing the natural gas. Consequently there must be multiple mechanical failures in the well for gas to get into an aquifer. That's not to say it doesn't happen, but it is mostly because of un-foreseen failures while drilling or careless and illegal practices on the part of the energy company drilling that well. It is not a common occurrence like so many have been led to believe. I mean come on, we are producing gas from reservoirs 1 mile below ground and most of the aquifers are 200' below ground or less, with multiple impermeable layers of rock between the two formations.

The bottom line is that the environmental agencies are somewhat to blame because they let companies do something that they have not proven is safe yet. There are instances of imprudent companies that contaminate aquifers because they didn't build a competent well to protect the aquifer, but those cases are not widespread and the environmental agencies police that issue pretty well in most states. We can produce hydrocarbons (oil/natural gas) safely, but it takes prudent energy companies and environmental agencies to understand the possible risks and design around them. You think going to the moon didn't have safety risks, but we designed around those risks and

for the most part got people there and back safely. Any form of energy we choose to use has its environmental drawbacks or is cost prohibitive for the customer. Do your research, there are drawbacks to every form of energy, so unless all you energy company haters want to start living without electricity, cars, plastics, or anything made by a factory then you need to realize that we have to use some energy, we just have to figure out how to do it with minimal environmental impact. The fact is that we all impact the environment,

[165. KJ](#)

New Mexico

February 27th, 2011

9:55 am

a friend recently sent a photo of Santiago Chile, a city of 6 million or so. In the background are the Andes which have many active volcanoes including one that overlooks the city and spews out more pollution than all the vehicles combined in the city.

Or consider this, as the population grows, so do our animal herds, according to a recent Brit study, 18% of all pollutants are produced by animal flatulence, plus add-in another 7% of all pollutants to produce, butcher and move the various meat products to our homes.

Then we need to consider that global warming means we use less energy to heat our homes although we'll have to develop web feet as places like Florida and most of the Eastern Seaboard become part of the Atlantic Ocean.

The world's most watched TV show, BBC's Top Gear, recently pitted a V-8 Jaguar against Hollywood's favorite knee-jerk vehicle, the Primus and guess which got the best mileage over a 100 mile course? Yep, it was the Jag. Guess we could switch to battery operated cars, but we're not being told is that as the temperature drops, so does the efficiency, guess that's why they not sold in Canada.

The point being that unless we want to get rid of at least half the world's population or become vegetarians (which also has its associated problems), our water and air is going to become more toxic as we scramble to provide energy including. Events like last year's BP disaster in the Gulf of Mexico will become normal.

[166. soum](#)

new york, ny

February 27th, 2011

9:55 am

i think the only way this can be prevented is through awareness. If individuals stop leasing their land to the gas companies then the problem can come down to a more or less negotiable stage. But now the states are leasing the national forests which i am not sure how.

I happen to work with a non profit organization which fight natural gas drilling in the state of new york and did some fact findings on what exactly is the law or even if there is any. To my surprise i found out that there isn't much in terms of document disclosure and the act is designed very much in favor of the drilling company. Now it is not rocket science to know that if you put heavy metals in the ground in a large quantity then it is pretty bad, so why to mention it. Ans thats exactly what

goes in as a mixture in the fracking fluid, not just regular dynamite sticks. However in the movie Gasland the details are more explicit.

And i think if America (the law maker USA) is convinced with the fact that natural gas drilling is the only way to stop unemployment then i would say they either need to take a non paid vacation to a third world country to understand what exactly is a toxic industrial waste, and what exactly it does to a human body.

[167.](#) Enya

China Beijing

February 27th, 2011

9:55 am

Personally, I find people's awareness of environmental protection are increasing. Though natural gas can help slow climate change, it also does harm to our atmosphere and rivers.

To be honest, the rapid industrial development is mostly supported by these fuels such as coal, oil, etc. I am sorry to say that the industrial development and the prospective outlook of human need these

temporarily. It cannot be avoided. But I believe firmly that there is a day when all the people on the earth can enjoy clean air, blue sky and pure water. I believe firmly that there is a day when we don't develop our world any more at the cost of our limited fuels and environment.

However, these aren't our excuse to develop without paying attention to its influence on our living environment.

Fortunately, I'm happy to see so many people not only including environmentalists but also the public are concerned about it.

Yes, no matter they are scientists or common citizens, they are working together to come up with an idea to solve the problem.

I can see our tomorrow is full of hope.

[168.](#) Brenda Seldin

Narrowsburg, NY

February 27th, 2011

9:55 am

Thank you for this excellently written investigative piece of reporting on unconventional gas drilling. I made two day trips to Dimock, PA to support families with contaminated water receive justice. During each of those separate visits, about 5 miles out from the township, the air quality drastically changed to one with a very chemical smell. Both times the following symptoms arose that did not disperse until I was back in NY - irritated eyes, dull headache, numb upper lip, irritated throat with a funny taste in the back of my throat that I couldn't get rid of. I drank canned soda while there and was there for 9 hours at the most. I can only imagine what this toxic air is doing to the immune system of children, the elderly and those with already compromised immune systems!

[169.](#) JLT

CT

February 27th, 2011

9:55 am

The government needs to protect us from greedy corporations.

Corporations are legally beholden to their stockholders to maximize profits every quarter, regardless of nasty environmental side-effects.

If you read about the “tragedy of the commons,” it becomes very clear that the government must step in to correct market failures.

The problem, in our case, is that the Republican party has obviously been bought by corporations.

[170. Citizen Monitors](#)

Williamsport, PA

February 27th, 2011

9:55 am

In addition to wastewater treatment plants, a number of private facilities were permitted to minimally process (remove heavy metals and hydrocarbons) from gas industry waste fluids and then discharge into waterways. Even with the new standards now in place, it is suggested you research to see if these facilities are grandfathered in and are still discharging minimally treated wastewater. In particular, check into one in Franklin PA and then see in which PA state senator's legislative district it is located and what her senate committee positions she holds.

[171. GB](#)

Delaware County

February 27th, 2011

9:55 am

I'm glad someone is doing some good old fashioned shoe-leather journalism on fracking. The facts you have unearthed are interesting, but your presentation is hyped and slanted. Why publish this article now instead of waiting a month to get results from the radioactivity monitor on the Monongahela? Otherwise it seems all fear and little substance. What if the terribly disappointing news came that . . . the water in the Mon is perfectly fine?

I'm a liberal Democrat, but sometimes the response to fracking I see reminds me of the Tea Party response to health care reform.

If it turns out that waste water as it EXITS treatment plants, and river water as it flows downstream, have radioactivity levels over the acceptable limit, then we should have strong regulation put in place to mandate levels coming out of the plants. This is capitalism after all, and someone will design a plant (or many plants) to do the job, if it is required. But until it is required, of course the gas companies will use the available, cheaper, methods.

So, I eagerly await the monitoring data. And I hope many more monitors are placed in rivers all over Marcellus country.

[172.](#) SB

WV

February 27th, 2011

9:55 am

I have more personal and environmental concerns with the continued legal practice known as mountain top removal. However, since more people that have more money are potentially effected by fracking, they view that as the biggest concern/threat.

[173.](#) Bill

Eureka Springs, Arkansas

February 27th, 2011

9:55 am

“Anywhere from 10 percent to 40 percent of the water sent down the well during hydrofracking returns to the surface, carrying drilling chemicals, very high levels of salts and, at times, naturally occurring radioactive material.”

And where does the other 60 to 90 percent of the water go? Into the aquifers?

[174.](#) Issador

Boston, Ma.

February 27th, 2011

9:55 am

When in the course of prudent endeavor to fulfill the livelihood of her citizens, to promote the economic wellbeing of a community, to ensure the future of a generation to follow, these United States shall not be denied the God given right to prosper. Any group or institution without reasonable cause, as can be conclusively shown, to impede this right of livelihood should be regarded as an enemy of our nation.

[175.](#) Buckeye

Ohio

February 27th, 2011

9:55 am

The owners of the major corporation, V&M (Vallourec and Mannesmann), producing the new fracking pipes in NE Ohio to penetrate deep into Mother Earth’s Marcellus Shale in America’s heartland are French and German. After these European parasites have destroyed our aquifers and polluted our soil they will leave America The Beautiful raped and poisoned while they laugh all the way to their European banks and profiteers. Since when has America returned to colonial status? Once upon a time to British aristocrats, and now to a more rapacious gang of European global capitalists who have nothing to lose by polluting our land; We The People have much to lose. Time to revolt before the damage is irreversible.

[176.](#) NSP3

Charleston SC

February 27th, 2011

9:55 am

Alarming to view the scope of this issue. I assumed we were ahead of this with technology to treat the contaminated water without chemicals. Check out the video on the link below. It simplifies the issue. I am not a scientist, but this seems to be a possible realistic solution.

<http://www.ecospheretechnology.com/>

[177.](#) alee

Budapest

February 27th, 2011

9:55 am

No amount of radioactivity is “safe”, and if the water could be filtered, the filtrate would still have to be disposed of safely.

On the bright side, they will have to take this seriously as killing off consumers will ultimately reduce demand, and hence profits.

[178.](#) Ladislav Nemeč

big bear, ca

February 27th, 2011

9:55 am

Simple question: what is the radioactivity level in the ACTUAL drinking water taken from the vicinity of the drilling water? That is what really matters. As the article states, nobody drinks the drilling water directly.

Drinking water HAS to be monitored for many dangerous substances and if the link to the drilling water is found, an immediate action should be taken.

Otherwise, we may be dealing with the standard ‘skies are falling’ syndrome so popular in the media.

The article is too long for me to read - perhaps this information is there. But an early sentence that the drilling water quality is compared to drinking water quality just because some ‘studies’ were not done is simply idiotic.

[179.](#)

Bob Garcia

Miami

February 27th, 2011

9:55 am

This is another aspect of our national determination to self-destruct. Maybe some day someone will understand this folly, but by then it will be too late. The United States will be an economic and environmental ruin.

180. Patrick

Long Island NY

February 27th, 2011

9:55 am

Today, I looked at the article title several times, but did not read the article until early Sunday morning. This article should have received much more highlighting and a bolder title than it did. This was a very important article, and I am deeply thankful for your extensive work for the article. I am shocked!

Please do two things; put this story at the top with a large title and carry the article for days so many read it. This is far more important than anything else now.

No wonder the corporate congressmen are trying to dismantle the EPA.

Thanks a million for all your hard work and travels in formulating this piece.

181. WQChin

NYC

February 27th, 2011

9:55 am

Given that natural gas and oil are poisonous to our health and environment, it is all the more urgent that federal funds allocated to develop solar, wind and thermal energies.

182. starislon

Astoria, OR

February 27th, 2011

9:55 am

Anyone who has watched the film GASLAND knows how dangerously polluted our most precious natural resource, water, has been rendered by this aggressively intrusive method of extracting natural gas. Hundreds of thousands of leases have been procured for drilling that pollute the land owners water supply with toxic chemicals to such a degree that the tap water is flammable. Many states already have suffered irreparable damage to ground water in large areas as the result of these deep infusions of very toxic chemicals into shale beds. After the gas has been extracted the home owner has to tote in drinking water and few choose to wash clothes or dishes or irrigate plants with "water" that you can light with a match. Thanks to the prior "governments" Energy Policy these drilling techniques "somehow" got exempted from normal EPA regulations. I would forgive a certain past vice president for some of his past actions if he would just drink five gallons from the kitchen tap of one of the families featured in the GASLAND film. So what will it be folks "Clean Gas" and "flammable water" or fresh water and alternative, sustainable, energy sources, for your grandchildren?

183.

Osons7

Scranton

February 27th, 2011

9:55 am

Sure Corbet sold out to the gas producers, but lets not forget that the Pa Senate President Scarnati (R) got to enjoy the superbowl on Consol Energy's dime. And its all legal -- only in Pennsylvania.

<http://www.politicspa.com...>

[184. TOM](#)

Easton PA

February 27th, 2011

9:55 am

Not content to be the garbage landfill capital of the Northeast, under Corbett Pennsylvania wants to become the “leader” in hydrofracking pollution of drinking water! It is insane and dangerous to allow the gas industry to threaten our health for the sake of the the almighty dollar while the EPA and PA state regulators stand by either unable or unwilling to enforce clean water regulations.

[185. ShowMe](#)

Missouri

February 27th, 2011

9:55 am

Mother Nature and God have conspired to put into place regulations that are inviolable. Short term profit by corporations seem to be more important to the CEOs than the long term health of the Earth. However, gates at the entrance to their communities will not keep out this kind of filth.

[186. MrHop](#)

Lowell

February 27th, 2011

9:55 am

Its not just the toxic water that is the problem -

The process of collecting the gas releases enormous amounts of Methane, which has 25 times the greenhouse effect of carbon dioxide.

This stuff clean burning - but thats it.

[187. chefstig](#)

new york

February 27th, 2011

9:55 am

As we watch agast and filled with outrage at the death raining down on the citizens of Libya by the actions of its own greedy, ignorant and barbaric leader , we smile and wave the stars and stripes for energy independence, deformed infants , sickly children, poisoned parents, dead lakes, dying forests and air too foul to support the life that is supposedly oh-so-treasured by most stupid and backwards elements of our own political buffoons.

Pardon my, while I barf.

[188. TLR](#)

Florida

February 27th, 2011

9:55 am

There is no mention of any alternative to water-based fracking. Surely someone must be working on a safer way to extract natural gas from shale without the use of water.

[189.](#) briget
Pittsburgh, PA
February 27th, 2011
9:55 am

The crisis here is that there is now proof of all the contamination and dilution of the toxic frack water into our water treatment facilities which, by the way, are not capable of treating this type of waste. The whole thing is alarming and there are sick people, animals, earth, air, and water to prove it here in PA. Not only that but an AP story earlier this year reported the illegal dumping of frack water into our rivers. Now the industry has censored the Wall Street Journal. What's next???

[190.](#) Beatrice
Delaware
February 27th, 2011
10:16 am

Everyone talks about the weather, but no one can do anything about it...or so the saying goes. The same applies to executive and corporate responsibility. The point is, there is none. The legislative executive responsibility is to protect the corporations whose deep pockets insure their tenure in office. The corporations responsibility is to make a profit regardless of the consequences to the public at large. Contamination of drinking water, land, and food, are of no consideration. And now, the regulations meant to temper this travesty are diminished or removed once more, to allow these corporations to foul us and our environment even more. For shame...for shame.

While it is true that our life styles demand the use of power/energy...as one commentor has suggested...it is also true that alternate forms of energy production, which do not require digging or the disturbance of the land or the fouling of the air & water, do exist and are largely being ignored. Why?...the profits made by oil and natural gas are far greater, by far. Once more, for shame for shame.

It is time we all stepped up to the plate of responsibility. It is the responsibility of our leaders to take the lead, and stop the carnage, and the spoiling of our land, air and water. To make it safe to drink water and to eat uncontaminated foods and play safely in a park whose underground is not contaminated with radiation or sewage. That is supposed to be their primary function. To do that, they need to demand consequences of all these responsible corporations, which need to be swift and severe. The re-election process and result should be up to the people and not the corporation's ability to buy the election for their select persons. Wake up people, we are loosing our control and our ability to protect our homes and our families. Wake up!!! Now we need to be proactive, to demonstrate our disappointment. The time is now.

[191.](#) dbg
Madison, CT
February 27th, 2011
10:16 am

My favorite line in the whole article sums it up: "Industry officials say they are not concerned."

It's going to get ugly when there is no potable water.

[192. Big-x](#)
Seattle, WA
February 27th, 2011
10:16 am

There is an environmentally friendly method of fracturing wells also. GasFrac Energy Services, www.gasfrac.com, has been fracturing wells without using water. They recover 100% of the fracking fluid used and more importantly they do not flare it nor is there any waste that needs to be treated.

These guys should be the ones fracking all wells

[193. ED](#)
Texas
February 27th, 2011
10:16 am

I'm disappointed the article doesn't state areas where people's tap water from their kitchen sinks could be set on fire due to fracking. The fracking causes cracks in the bedrock and allows natural gas to find it's way into wells. I watch a documentary called Gasland and it goes into much more depth than the article does. Thanks to Cheney and Bush signing into law allowing the gas/oil companies immunity from following the Clean Air and Water Acts. They show both peoples water catching fire and a steam catching fire from the gas flowing up into the water systems. Sad Sad Sad our country allows these companies immunity and disregard towards human health and environmental safety!

[194. BobbyCat](#)
Buffalo
February 27th, 2011
10:16 am

Trucks containing fracking waste water have recently been banned from dumping in the Buffalo (NY) sewer system. The City Council banned hydro-fracking within city limits. But the New York Dept. of Environmental Conservation (DEC) will announce their new rules for hydro-fracking in just a few months. I wonder how much of this national data was incorporated in their scoping study. I suspect that it's another rush to judgment. Congressional hearing have disclosed that diesel fuel is a major component of the fracking wastewater. We're poisoning our groundwater and our rivers. We need to slow down.

[195. NYT reader](#)
Boston
February 27th, 2011
10:16 am

- 1) Many of us watched Jon Stewart's interview of folksy T. Boone Pickens as he blithely defended the safety of fracking. When "Gasland" is nominated for its Oscar, the Pickens video clip should be play as point/counterpoint - truth vs. lie.
- 2) The Republicans of PA are getting what they voted for as a governor. They'll drink and breathe contamination which will result in disease, leading to rising health care costs, and wonder why the budget is not controlled.

[196. Frank](#)
madison, wi
February 27th, 2011
10:16 am

Interesting article, so the woman who's children have asthma blames the fracking of wells 8,000 feet underground for air pollution? Or the natural gas compressor station, of which thousands are located all over the country, pretty easy to do a study on those.

The point is that there is nothing factual in much of this article, but rather a loosely put together story designed to fill space and get attention in the New York Times. The sad thing is that the times seems to now just simply be Fox News in print for liberals.

[197. rmarc](#)
albany ny
February 27th, 2011
10:16 am

The Repugnant mantra has become "deregulate, deregulate, deregulate". Of course the Koch brothers can get their water from springs in the Swiss Alps flown in first class on Swissair! I cannot!

[198. Dood](#)
NY - FL
February 27th, 2011
10:16 am

Water is oil for humans. It's our most critical resource and needs to be protected.

[199. David Elliott Lewis, Ph.D.](#)
San Francisco
February 27th, 2011
10:16 am

Before some communities mount their next NIMBY campaigns to stop the installation of clean energy producing wind turbines, they should consider the adverse environmental impacts of the alternatives, such as natural gas extraction. All energy sources have their drawbacks. Some, however, are far worse than others.

[200. River](#)
Queens, NY
February 27th, 2011
10:16 am

It is all good. Don't believe those crazy environists. Just want to make a buck. Troublemakers like those people in the midEast. Money is good. It is people who are the problem. Get rid of them.

201. hal herring

montana

February 27th, 2011

10:16 am

Thanks for an excellent article. I watched “Gasland” with real interest and admiration, but was a little worried that it has taken so long for the public to gain an awareness of a situation that has been unfolding in the West for over a decade.

The fracking fluid spills - please check out the Roan Plateau, with the spills going over the waterfalls and freezing into “mudcicles” and the sad case of outfitter Ned Prather near DeBeque, poisoned by his on spring.

http://www.denverpost.com/news/ci_13535728

And here is a piece that tries to wrap up the reporting that I was involved with since about 2003.

<http://www.miller-mccune.com...>

202. harlz

NY

February 27th, 2011

10:16 am

“My hope is that New York would follow the lead of Seville, Spain and other cities in converting to a truly green (non-fossil fuel) energy systems now”

Ruth – if you are dreaming of wind and solar to power NYC, think again – the Spanish have found out the hard way it doesn’t work, and at great expense are backing out and relicensing their hardworking nuke plants:

<http://tinyurl.com/4ac2nf2>

If you were thinking, however, of truly green Generation IV Integral Fast Reactors or Liquid Fluoride Thorium Reactors that would turn Gen II reactor waste, unneeded warheads, and depleted uranium stockpiles into massive amount of electrical energy – then I am wholeheartedly with you

203. Bob Carroll

Northampton, MA

February 27th, 2011

10:16 am

I am amazed that such a lengthy and seemingly well-documented article failed to mention Halliburton and the fact that fracking is was exempted from the Clean Water Act in 2005. If it is exempt, why would anyone inspect? Let;s try and get all the facts next time.

[204. Jeffw](#)

Zephyrhills, Fl.

February 27th, 2011

10:16 am

“I’m not an activist, an alarmist, a Democrat, environmentalist or anything like that,” Ms. Gant said. I believe the division of our government has trickled down to the people. In America’s founding fathers were all of these traits at one time or another. “All that is necessary for the triumph of evil is that good men do nothing.”

[205. Mike](#)

NH

February 27th, 2011

10:16 am

What’s all the fuss? According to this article, “Industry officials say they are not concerned”.

[206. colonelP](#)

Georgia

February 27th, 2011

10:16 am

Don’t worry. The free market will fix everything :-)

I know. It said so on the right wing radio.

[207. Frank](#)

madison, wi

February 27th, 2011

10:16 am

What a poorly worded and biased article. If natural gas emissions were so horrible the best place to research this would be New York City, the largest user of natural gas in the USA.

Words like can, is possible, they believe are just pure conjecture made to seem like facts. Obviously the writer never took a basic science course.

[208. Doug](#)

West Coast

February 27th, 2011

10:16 am

I am just watching the movie “Erin Brockovich” which was based on a real incident. It seems to apply to this discussion. Worth watching again.

[209. Malhock](#)

Montpellier, France

February 27th, 2011

10:16 am

Good article. It is published at the right moment as “Gasland” can probably win an oscar in LA. The main fear of big energy corporation is happening, in just a year their “fracking drilling machine” has

been attacked as never before. “Gasland” in HBO in June, first demonstrations in the south of France (Larzac, Ardèche) against soil prospection in October. One thing for sure, the more you know about fracking the more terrified you get. Are those energy corporations executives really aware of what they are doing? I hope not for them.

[210.](#) Charlie Kearns

Zanesville, Ohio

February 27th, 2011

10:16 am

Oh stop worrying. No one living on Wall Street or Washington DC is ever going to have to drink this water. They have a clear plan to save themselves. It'll be perfect. Just like the last stock market crash. You don't see any of them living in trailers.

[211.](#) Mark

Northern Virginia

February 27th, 2011

10:16 am

When our government agencies are too compromised by industry influence to promote the common good and protect public health . . .

. . . you can really see “small government” at work.

No government, no country.

[212.](#) eaglelady8

Michigan

February 27th, 2011

10:16 am

Some people in and out of government think that the earth will always “heal it's self. MAYBE in a million or billion years. In the mean time the corporations who run this country will continue to rape and pillage the environment. Pollute the air and water in the US to sell the products to foreign countries while poisoning us.

Feeling all warm and fuzzy about that?

[213.](#) R

California

February 27th, 2011

10:16 am

Will we never learn from our errors?

A Civil Action

<http://serc.carleton.edu...>

The Love Canal Tragedy

<http://www.epa.gov...>

Then, there's the Ciba-Geigy contamination case...

<http://www.epa.gov...>

<http://rarediseases.about.com...>

214. David

Logan, UT

February 27th, 2011

10:18 am

This issues is a bomb waiting to explode. The waste water treatment plants and EPA's hands are essentially tied. Consider that at the same time oil and gas companies are on a drilling rampage, the EPA's budget will likely be reduced by a huge amount. Although the EPA doesn't treat waste water, it provides the regulatory structure and 'big stick' for the states to permit waste water dischargers. Waste water treatment plants are designed for the long term and it literally takes years to design, finance, and build new plants and upgrade older plants to meet new requirements after those requirements are established - a very expensive process that will take years because of the science required to make policy and because of the inevitable opposition to any standards that will be posed by the industry and their lobbying lapdogs. Also, because of the economic windfall to the companies and the influence of the oil and gas industries in government, waste water districts are under enormous political pressure to, essentially, launder the wastes generated by hydrofracking (I note in passing the use of fracking by the writers of the TV show Battlestar Galactica as a surrogate for another well known four letter word). The industry is essentially dumping its social responsibility for treating and disposing of this wastewater onto the public and washing its hands of any liability. As a member of the public I am outraged that they're getting a free pass.

215. Theo

Phoenix, Az

February 27th, 2011

10:18 am

I have heard Charles Koch voice his opinions privately and he actually feels that he has been appointed on a mission from God to deliver our nation from the yellow peril. He thinks we can always fix 'the little stuff' and the 'big thing' is energy, cheap and efficient. Pollution can be fixed. Private is good, government, that doesn't work for his interests, bad. He is really a very simple man, married to an ex-second grade school teacher of equally modest intellectual curiosity. They are from Wichita, Kansas, and extremely xenophobic and provincial in their private views despite their private control of close to \$1 trillion in wealth and all the world that exposes you to in theory. In fact, they travel in a close, security obsessed, insulated little world discussing which is the best new Gulf Stream jet or in spot to host their next millionaire get together. When this democracy was formed there was a very serious flaw thrown into the field of 'one man one vote, that turned out to be one northern free male one vote, v. one southern man, one vote plus .33 votes under his control for every slave he owned. One southern plantation owner with 10,000 slaves voted 3,300 times with his single ballot. Since the stacked Supreme Court decision opening the floodgates of Koch money to legally influence local and federal elections without disclosure or consequences (rather like the 'hidden and secret ingredients' used in the fracking process or oil cracking generally - an industry under direct patented Koch Industry control) the way the Koch brothers feel easily influences

several million votes and a good part of our elected officials. The fracking mess is just one of many that can trace its waste lines directly back to the source.

[216.](#) Bob M
San Diego, CA
February 27th, 2011
10:18 am

By comparison to this, I do not see that nuclear energy is a larger risk. At least the waste from nuclear plants is completely controlled. Is it just me, or does anyone else sense an increasing desperation in fracking for gas, taking mountaintops for coal and drilling for oil at ever greater depths offshore? We are literally scraping the bottom of the barrel even if our production appears to remain constant, and the consequences to our environment and health will only increase with the inevitable increasing desperation of such endeavors.

[217.](#) In China, Cultivating the Urge to splurge
Woodstock, NY
February 27th, 2011
10:18 am

Insatiable need for energy, indeed. I think if we all became aware of how much energy we waste (do we really need to keep those outdoor flood lights on during the day? Can we take a few extra minutes to hang our clothes on drying rack or clothesline instead of using the dryer, unplug appliances when not in use?) and took steps to conserve, we would eliminate the need for so many new power plants.

[218.](#) lois
Sunnyvale, CA
February 27th, 2011
10:18 am

“A method to extract more natural gas often produces wastewater laced with radioactive or other toxic substances”

Having lived in NM, TX, AZ & CA for most of my life, I find that we not only “burn the furniture to heat the house”, we are squabbling (actually waring) over the precious drops left from our wasteful use of water from day one. Let’s get real - our natural resources are not infinite and one by one each of us must take heed on a daily base to preserve & use wisely this precious resource. Of course, I’m dreaming! In nearly 80 years on this earth, I just have to look out my window for proof.

[219.](#) Micheal Deal
Leipers Fork, Tennessee
February 27th, 2011
10:18 am

Gas well drillers have been fracing wells in tight formations for over thirty years. Early fracing used a variety substances, including walnut hulls. While there certainly should be reasonable regulation, perhaps even licensing, of fracing additives, outright prohibition goes far beyond the problem. Such regulation is well within the regulatory powers of the states in which drilling occur. The regulatory

authorities in states like Oklahoma, Texas and Colorado have been doing it for as long as there has been fracking. New York and Pennsylvania regulators might do well to concede that they can actually learn something from folks out West.

220. Laurie

Pittsburgh, Pennsylvania

February 27th, 2011

10:18 am

Is anyone really surprised by this? I'm not, sadly. Drilling was already too lightly regulated here in Pennsylvania, and now that Tom Corbett is governor, things will only get worse. The frackers paid for his campaign, and now they're looking for a return on this investment. Just this week, Corbett rescinded a regulation that banned fracking on state lands. Pennsylvania frequently allows drillers to flout regulations, and it won't get any better under the new administration.

Citizens can't count on state regulators to protect them. It's doubtful that the feds will ride in on a white horse to our rescue - IF they ever do it will probably be too late. We need to fight back, and make sure the frackers are held accountable for ruining our environment and endangering our health. There are ways to fight back: <http://www.water-contamination-from-shale.com...> need to do it now!

221. B. Bryan

Texas

February 27th, 2011

10:18 am

Yes yes and it takes years and years and lots of money to establish that we are being poisoned by something or other and unfortunately health insurance companies won't pay to treat these problems.

222. In China, Cultivating the Urge to splurge

Woodstock, NY

February 27th, 2011

10:18 am

It's such a shame that the drilling is taking place in some of the most fertile farmland in the country. We can't have a local, sustainable food source in this region if the farms are being converted to drilling stations. Farms and fracking don't mix!!

223. Stephanie

NJ

February 27th, 2011

10:18 am

Can Obama, or someone who actually cares about the future of humanity, PLEASE start funding green technologies and get the heck off of fossil fuels?!?!? Enough with corporate sponsorship of elected officials. Does anyone have a moral compass?! It is just too depressing to read the news now.

As people become more and more interested in texting and watching more reality junk tv shows, the wealthy (Koch) will buy more and more of the government and we will be going backwards as a nation. As we slide, the world slides. This depresses me even more.

[224.](#) James
Long island
February 27th, 2011
10:18 am

Government is bought and paid for by corporations. Is anyone really surprised this sort of thing is allowed to go on? We need to take our government back if we want real change.

[225.](#) LarryG
Virginia
February 27th, 2011
10:18 am

At the end of the day can we, as a people, decide on which direction(s) we want to take in energy to include the realization that hydro, wind, solar will most likely result in doubling or tripling of our residential electricity bills.

The industry tells us that we can have CLEAN COAL and we can but it's going to cost as much as solar or wind or worse by the time we remove the pollutants from it.

it goes back to this: Are Americans ready to pay 3-4 times as much for electricity and vehicle fuel as they are right now?

[226.](#) TJ Colatrella
Boiceville NY
February 27th, 2011
10:31 am

We need to move to Flex Fuel Vehicles, which can be easily done and lift the ban on Industrial Hemp..!

Industrial Hemp could cut our use of Oil in 1/2 in short order..

Brazil is already at 45% Renewable Energy..this would free up already existing sources for power generation and heat..!

Industrial Hemp is not Pot does not get you high and can be refined regionally thus enhancing National security as all our refineries are concentrated in 3 areas..easy targets and we have not built a new one for decades..

Industrial Hemp Renews every 4 months and grows anywhere...

We'd create real Green Jobs and you can pack an acre with it no need for rows...

Between these insane "Fracking" methods as well as the even possibly more insane even deeper water drilling for Oil soon at 10,000 planting a seed in the ground and getting Cellulosic ethanol and also Bio-Diesel from it seeds makes more and more sense everyday...

Algae come on imagine the ramifications if it mutates and remember that will be proprietary so

prone to abuse and price manipulation the progress for it's development is going very very slowly..

See [Hemp4Fuel.com http://www.hemp4fuel.com/page.php?2](http://www.hemp4fuel.com/page.php?2) Why Hemp?

It's a shame our government repeatedly denies science and practicality due to the corrupting financial influence by our ever more corrupt and suspect corporations..

227. kawartha

lakes

February 27th, 2011

10:31 am

any fracking ,anywhere , WILL POISON THE GROUNDWATER FOR CENTURIES !!
don't let them drill in your neighborhood ,trees will die, wetlands will become toxic.

228. Frank

madison, wi

February 27th, 2011

10:31 am

Now I know this article is pure propoganda. Water can't seep through a few thousand feet of rock. Think, if this overpressurized shale with ancient oceans in it has been locked underground for 10,000 of thousand of years, why hasn't it escaped a long time ago. The average verticle fracture length is about 150 feet.

Nasty propoganda New York Times, you bias is blantant.

229. TK

Sydney Australia

February 27th, 2011

10:31 am

Fracking was invented by Haliburton who we know is linked with Dick Cheney, the ex Vice President.

Its a process that comes with a dirty past in more ways than one.

When it comes the smoke and mirrors of self regulation then another sick joke is foisted upon the hapless public.

The exploitative process is just starting to ramp up here in Australia.

Im providing a link to coverage by our goverment owned television station if any body cares to watch.

http://www.abc.net.au/4corners/special_ed/20110221/gas/default.htm

230. Bill B

Bethesda

February 27th, 2011

10:31 am

Lax regulations in the energy industry? I am SHOCKED!! Next you will be telling me they are the largest recipients of corporate welfare and abuse the land rights of the citizens of this country.

231. M.LiCalzi

Santa Monica, Calif.

February 27th, 2011

10:31 am

i applaud the courage and excellent research that it took to write this article. The fight in Pa has been going on for over 2 yrs and it is heart breaking to see how the land is violated. The corporations have no soul or ethics. There is no respect for land ownership and our justice system and democracy are a thing of the past. The legislators are making money and the people be damned. I sincerely hope it is not too late to save our water. This is going on throughout the West, Tx, Okla, La.

232. Polar Bear

melting North Pole

February 27th, 2011

10:31 am

Thank Goodness the Times is getting around to getting the truth out about Fracking..Oklahoma just got a Texas company to review our use of Fracking and everything is GREAT..The wolf guarding the henhouse may destroy the planet...Think how many thousands of holes will be drilled and filled w all kinds of poisons..Then we get to use dirty tar sands oil from Canada as our number one source of oil and disaster is not far away..Don't forget Global Warming ...Bye planet....

233. hopeful

northwest

February 27th, 2011

10:31 am

Republicans want to cut funding for the EPA, as well as trimming environmental regulations, because they're concerned that the real problem is PR. "What you don't know about won't hurt you" seems to be the theory.

234. harlz

NY

February 27th, 2011

10:31 am

John Pgh said, "I would, however, take issue with your claim of 'rare support' from environmentalists."

Is Robert F. Kennedy Jr. a big enough "environmentalist" for you?

<http://atomicinsights.blogspot.com...>

235. Barb

NYC

February 27th, 2011

10:31 am

Everyone go see the terrific documentary GASLAND which drives the dangers of natural gas fracking home, and is nominated for an academy award.

[236. Tpnews1](#)

FL

February 27th, 2011

10:31 am

SHOCKED. the search for cheap energy produced unintended consequences. who knew????

[237. jmg](#)

montpellier.France

February 27th, 2011

10:31 am

yesterday, in south France, thousands of people were demonstrating against similar projects of extracting gas from the area called "les Cévennes", a southern part of the Massif Central. There is a scientific certainty about the pollution of water, endangering health just to satisfy the greed for energy of our societies. As Tim B wrote a return to simplest way of life becomes necessary and even urgent

[238. Anne](#)

Berlin, Germany

February 27th, 2011

10:31 am

Good article and video, but too bad it took the NYT so long to get around to it. With Gasland up for an Oscar and public interest in fracking established, I guess the paper's criteria for investigative journalism were met: sexy issue, safe ROI.

[239. Dissenta](#)

Honesdale PA

February 27th, 2011

10:31 am

Wow, talk about not thinking: In my comment above, I should have said, not "like one of those temporary spare tires designed to get you to the gas station but not an inch further," but "get you to the electric car charger station powered by solar energy so you can keep on going." You get the idea.

[240. ShowMe](#)

Missouri

February 27th, 2011

10:31 am

Oh, by the way, money is to be made on selling bottled water, too. Big money!

[241.](#) Greenwoman
Afton, NY
February 27th, 2011
10:31 am

There have been many excellent comments, but I want to stress that the only sane way to proceed is through use of the precautionary principle, not “acceptable risk.” How many ruined forests, streams, and farms are acceptable? How many children suffering with headaches, dizziness, asthma will we deem acceptable? How many future endocrine disorders or cancer are acceptable.

Do CEO’s and other gas industry executives actually live in gasfields? How many will retire to safe parts of Texas - or to Norway (Norse Energy), Spain (Iberadrola, planning to help gas companies store gas in salt mines near and under Seneca Lake, NY), or even China (almost 50% interest in Chesapeake)?

Finally, those who take a serious interest in climate change will study the work of Dr. Robert Howarth of Cornell, which is ongoing but indicates that the methane escaping from gas wells, compressors, and pipelines is as serious a greenhouse gas as the CO2 from oil or coal. I believe that Dr. James Hansen agrees, as do other students of global warming. We must stop the “bridge fuel” nonsense and insist that our government stop subsidizing the oil and gas industry and make an all-out effort to fund wind, solar, and tidal energy.

[242.](#) Susan
Westport, CT
February 27th, 2011
10:31 am

The paper industry (needed to print the NYT) and the farming industry (users of huge amounts of chemicals) produce MUCH more pollution than the natural gas industry. And of course you have to chop down millions of CO2 eating trees to make paper.

Another fair and balanced bit of ‘reporting’?

Where are the cries to shut down paper mills and stop the use of fertilizers?

[243.](#) Mekhong Kurt
Bangkok, Thailand
February 27th, 2011
10:31 am

@Paul Austin (Comment #7/Oldest-to-Newest): The article cites numerous sources, including the secret one in 1990 conducted by the *industry itself* that found significant threats.

I doubt the New York Times would stoop to yellow journalism, especially when it would be possibly, perhaps easily so, to expose any fraud they perpetrated on us. My doubt that they wouldn’t is hardly proof, true.

Of course, your doubt that they would isn’t proof, either, is it?

Further, you assail the NYT for not having enough “evidence” -- I guess industry and regulator reports taken together with private individuals’ anecdotal reports of problems in their homes, neighborhoods, or regions don’t meet your definition of “evidence,” so I wonder what DOES meet it -- and you do so without offering one iota of evidence yourself. Instead, you resort to personal attack by calling the story no better than one that is comparable to “a poor highschool science

report.”

Most astonishingly, you wrote, “Also, ‘laced’ i[m]plies that these radioactive substances are added to the frac fluids. That is not the case” -- the latter an absolute statement brooking zero exceptions, yet even for this outlandish assertion, you give NO proof. Nothing, nada, opposite the whole enchilada.

Are you perchance employed in the gas industry?

[244.](#) dickginnold

San Cristobal de las Casas, Chiapas, Mexico

February 27th, 2011

10:31 am

I agree with the many comments criticizing the fracture drilling going on and its effects. Another place where Obama is dropping the ball and his Energy man, Salazar, is asleep at the switch.

Maybe I am a nervous ninny, but what about effects on the earth’s structure from the frantic deepwater oil drilling, gas drilling all over the earth, etc. Could this be having an effect causing more plate movement and earthquakes. We have had more killer earthquakes in the last 10 years than in the last several hundred.

Has this possibility been studied by other than an oil company financed hack? How can the human race be so stupid and temporizing? We need to start practicing conservation, energy saving and changing and reducing our consumption needs. Is anyone listening? Whatever happened to Earth Day?

[245.](#) Ted Brucker

Denver CO

February 27th, 2011

10:31 am

It is fitting that this article is being published on the day of the Oscars. Josh Fox’s documentary - GASLAND - has been nominated.

If you read the article and the supplemental material you find that there are three distinct health hazards.

1. The article uses leaked EPA documents to show the serious hazard of radioactive waste water that is invading streams and rivers - and ultimately fish and plants. It concentrates on Pennsylvania.
2. The accompanying VIDEO looks at the dangerous air pollution that is caused in the fracking process. The film interviews a family that is leaving Silt Colorado because they and their family and livestock have been poisoned by the air.
3. Also mentioned is the pollution of groundwater and wells. GASLAND has already made us aware of this serious problem.

If you are interested in this subject I would encourage you to read the lengthy expose released by ProPublica this past Friday. It follows the attempt by Louis Meeks, a Vietnam vet and rancher, who lives near the small Wyoming town of Pavilion northeast of the Wind River Mountains, to find out why he has lost his health, his family and his livelihood. In the spring of 2005 his well - noted for its

sweet, pure water - became undrinkable and then unusable. The article is available here:
<http://www.propublica.org...>

All of this provides more evidence of the power of corporations and the inability of this government to protect its own citizenry.

Note: GASLAND has been shown on HBO as part of its documentary series. One of the more dramatic moments is when tap water is lit on fire! The film documents Josh Fox's travels from his home along the Delaware River in Pennsylvania to Colorado, Wyoming and Texas to learn about fracking and groundwater contamination.

246. antonio larrosa

Barcelona Spain

February 27th, 2011

10:31 am

Cada día, al leer las noticias , descubrimos motivos suficientes para abominar a la raza humana que todo lo contamina . Es horroroso que estemos bebiendo agua y nos estemos envenenando . ;¡Nunca lo hubiera sospechado, pues siempre pensé que el agua era la más sana de las bebidas!!

Clica sobre mi nombre

247. Mike

British Columbia

February 27th, 2011

10:31 am

I think that any article on this issue which fails to mention Dick Cheney is missing a huge part of this story. As others have noted, the influence of Cheney's secret energy task force was clearly on display in GWB's 2005 energy bill, which exempted the natural gas industry from any obligation to follow any of the Nixon-era environmental regulations (Safe Drinking Water Act, Clean Water Act, Clean Air Act, etc.) with respect to hydraulic fracturing activities. Thanks to this generous loophole, many state environmental regulatory agencies can't even properly assess the contents of the toxic soup being pumped into the ground. Halliburton and others merely have to claim proprietary interests in the recipe, and they are permitted by law to keep the mixtures secret -- like the Colonel's "11 herbs and spices".....

The saddest part of this article is the rural resident who's quoted as saying, "I just want clean drinking water -- it's not like I'm some Democrat or anything." Yeah -- God forbid you turn into one of those. No need to elect people who believe in enforcing regulation or anything -- I'm sure John Boehner and the US Chamber of Commerce will do the right thing once they're made aware of the problem. In the meantime, look on the bright side. Your tapwater may be flammable and glow in the dark -- but at least those gay couples in San Francisco and NYC can't undermine the sanctity of your marriage!

What's it gonna take for rural America to stop voting against its self-interest?

[248.](#) Pauline

NYC

February 27th, 2011

11:25 am

The terribly sad truth is that we as a species, and our planet, will have to suffer for at least another hundred years before this turns around. Whether we can survive it is another matter.

WHY? Because as long as foul fossils are there in the ground to be burned, and there is money to be made, the mad dog corporations that now run our governments and industries will be slaving and falling over themselves to scarf it up. What are lives, a decent place to live, health, humanity, decency worth, compared to money and profit? Nothing.

Why waste time inventing new technologies when there is money in the ground just waiting to be burned? Consequences be damned for these errant, reckless, criminal fools.

And we go along with them, allow it, nod off, while our heritage, the environment that is the very source of our lives and our existence, is stolen from us.

How did human beings come to the pass where they think they exist outside of the environment that produced them?

What utter fools we humans -- who arrogate to ourselves "dominion" over that which gave us our very existence -- tragically are.

[249.](#) pd

Maryland, USA

February 27th, 2011

11:25 am

One person sick in the affected areas should be enough for humanity to know that something is very wrong . It may take years to prove that this process is poisoning our water but it WILL be proven, just as it was with Love Canal. There is also another problem caused by fracking that does not seem to get much attention and that is earthquakes. Look at the earthquakes in Arkansas . Is fracking causing them ? This is the New Madrid fault ! Does fracking cause earthquakes ? Were the 1960's Denver earthquakes caused by fracking ? This study says they were..

<http://adsabs.harvard.edu...>

[250.](#) Jean Clelland-Morin

San Antonio, TX / France

February 27th, 2011

11:25 am

Kelly Gant said: "I'm not an activist, an alarmist, a Democrat or anything like that.....". Why do people wait until IT happens to them to speak out??! // Jean Clelland-Morin

[251](#). pas
mpls,minnesota
February 27th, 2011
11:25 am

George Bush invited these pirates onto our public lands, and encouraged endless drilling in all areas of states that might have gas deposits. Barack Obama continues on the same path. In fact, if anything, Obama's EPA is weakening regulation to please industry.

This could be just fine. We all know that the United States needs to develop new energy sources, and natural gas is an excellent alternative. But instead of moving the industry to keep its work as clean as possible, our government works to keep the industry as cheap as possible. This generates huge profits for the private sector, and puts a smile on the faces of those 1%ers at the top of our free market food chain, but for the rest of us, those who have to live in the areas where this gas is produced, a nightmare is beginning to take shape.

Fracturing releases both gas and chemicals into any aquifer resting in or near the deposit being exploited. Fluids returning to the surface of these wells are pumped off into natural drainages and allowed to flow freely. Both the process of fracturing, and the runoff created by it, are nightmares for the environment.

The industry refuses to deal with the problem. It would cost the owners money to fix it. The government can easily identify the problem, but the government will do nothing to stop it, because the government is in the pockets of the industry. Instead the government will produce studies that identify the issue, and define the terms of the pollution, clarify the extent of the damage, and (perhaps 20 years down the road) delineate the superfund sites to enclose those areas impacted by the industry, and that is all.

We need to act more quickly to create reasonable regulations and restrictions on this process before it wipes out huge swaths of the western plains. The current regulations are a travesty and beyond short sighted. It is a crime.

People will pay with their lives and dreams, but not the people who should pay. The men who own the wells and pipelines and companies that produce natural gas in this manner will grow richer and richer and fatter and fatter, sucking the blood of our nation.

[252](#). Colpow
New York
February 27th, 2011
11:25 am

Thank you, New York Times, for publishing this article and bringing it to popular light. We need real reporting of real issues, and I hope this is a new trend in the news business.

[253](#). Ando Arike
Brooklyn, NY
February 27th, 2011
11:25 am

“We’re burning the furniture to heat the house,” said John H. Quigley, who left last month as secretary of Pennsylvania’s Department of Conservation and Natural Resources....

Poisoning the well to feed the kids! [What kind of people pump benzene into the ground they drink from? This is INSANITY.]

This is journalism at its best, but, alas, in the end Americans will fight to the death over who gets to chop down the last tree.

[254.](#) the voice of reason

NC

February 27th, 2011

11:25 am

“Gasland” was this same article’s subject in a visually impressive (for a documentary) version. though it has been out a while already, it is good to see this atrocious misdeed by gas companies getting coverage. look this up and learn about it. they will be coming to your land and making you sign...RUN THEM OFF!!!

[255.](#) [Francis Thomas](#)

New Kingston, NY

February 27th, 2011

11:25 am

Corporations over the past several administrations (both parties) have gained more rights than the individual.

See recent Supreme Court decisions. Problems such as this will only get worse. Campaign contributions beget lobbying which begets increased profits, increased power and reduced taxes. Things not accrued to the individual. PUT ANY PROBLEM into this equation. It works!

[256.](#) Susan

Abuja, Nigeria

February 27th, 2011

11:25 am

See “Gasland”, a terrific documentary on the dangers of hydrofracking.

[257.](#) MB

Marathon, NY

February 27th, 2011

11:25 am

It is about time a major newspaper covered this issue; many of us have been screaming about toxic frac waste for a long time. Thank you and good job!

Next, the Times should look into the land grab that is taking place upstate. Compulsory Integration, fraudulent lease extensions and Force Majeure, leases that never terminate, royalty fraud, and the deception used by landmen to get people to lease. Cuomo himself has called it a land grab, but the Attorney Generals office is only addressing a limited aspect of this land theft fraud.

[258.](#) bornorange
upstate, NY
February 27th, 2011
11:25 am

NYT said, "Other documents and interviews show that many E.P.A. scientists are alarmed, warning that the drilling waste is a threat to drinking water in Pennsylvania."

I travel through the northern PA. gas region and have a few things to share. First, I have read many, many articles like this one that are today's excuse for investigative journalism. These articles are designed to stir up the fringe that teeters on the edge of reality. Vague references like "many" and "other documents and interviews" are not good journalism. That said, here's the second point.

The most known "pollution event" in PA is that of Dimock. My conversations with people in the area reveal that their water was terrible long before the first drill. In fact, I have a friend in nearby Tioga County that invited me to "LIGHT HIS WATER FAUCET" outside. He says that the gas in the water has been there for decades and is not uncommon. Anyone living over the Marcellus shale (and I am one) has known about radon and the existence of related hazards. As I understand it, the waste water is being mixed with sawdust and deposited in certified landfills around here.

As an aside, the enviro-lobby needs to get worked up about the "Mideast-size" oil deposits under the shale...

[259.](#) Charles Brobst
Binghamton, NY
February 27th, 2011
11:25 am

Fracking will make our state a toxic uninhabitable wasteland.

[260.](#) Susan
New York, NY
February 27th, 2011
11:25 am

Alarming and important reporting--with a headline that rightly emphasizes lax regulation. Thank you, NYT, for demonstrating why good journalism is crucial.

[261.](#) smart fox
Canada
February 27th, 2011
11:25 am

certainly the most instructive piece (including the technical aspects) I have read on the subject

thank you

[262.](#) MikeLT

Boston

February 27th, 2011

11:25 am

The New York Times should make this article required reading of all its on-line readers... A person shouldn't have access to the rest of the NYTimes.com site until they read this article! This is a HUGE public health issue.

[263.](#) bnc

Lowell, MA

February 27th, 2011

11:25 am

Henrik Ibsen portrayed this precise scenario in his play "An Enemy of the People". Then it was tanneries that were pollution the water "downstream"; now the problem is on a much greater scale and could kill many more people than any terror attack.

Words truer today than when I penned them before George W. Bush was re-elected:

That Democratic Congress was going to impeach both Dick Cheney and me.

Harken, Halliburton, Enron and Carlyle - our criminal complicity.

What they'll never discover is the great fortune we and my secret contributors now share;

For the profits of oil, pollution and war we really care.

.....

Many more people than on 911 will die or become ill

From the toxic fumes that from those polluting smokestacks continue to spill.

Death will come much more slowly for those with incurable ills

And my pals, the phamaceuticals, will sell many more pills.

The great unspoiled beauty of Alaska will all disappear,

All thanks to my new exploration policy, have no fear.

[264.](#) jsb

binghamton, ny

February 27th, 2011

11:25 am

Tell Kelly Gant that's why God made moving trucks.

[265.](#) Calvin Tillman

DISH, TX

February 27th, 2011

11:25 am

This is a great piece of journalism. It is obvious that the journalist put a tremendous amount of time and effort into this article. He truly understands the issues at hand, and clearly illustrates them.

Several years ago when I heard that drilling waste was being dumped into rivers that provide drinking water in PA, I was shocked at how irresponsible an industry could be, and how foolish a a regulatory agency paid by the taxpayers could be. Frankly, this should be criminal.

To all my good friends in PA, you need to start thinking about opening a bunch more cancer treatment centers, because you are going to need them. And to the critics who say this is all nonsense, and nothing is wrong with what is going on, go visit one of the cancer treatment centers and ask those people if it is real.

We now import oil on big barges; we will soon have barges lined up at our ports with fresh water that is being imported. We have technology to allow us to live without oil; however, we cannot live without water.

[266. Jeff](#)

New Mexico

February 27th, 2011

11:25 am

The natural gas industry has a MORAL RESPONSIBILITY to clean up it's act. Contaminants should be brought down to the levels they were before the drilling. Anything less and they should be (at the very least) thrown in jail. Every one of them, lock em up!

[267. kieran27](#)

nyc

February 27th, 2011

11:25 am

NYTimes, please continue this excellent journalism that exposes what your readers are facing - an unregulated gas industry on the brink of ruining water supplies for many in Pennsylvania and New York. We can't count on government anymore. Investigative journalism can help educate and motivate residents to fight for what they are about to lose.

[268. Elizabeth Fuller](#)

Peterborough, NH

February 27th, 2011

11:25 am

Wasn't it Dick Cheney who spearheaded the fight to create a loophole to exempt fracking fluids from the Clean Water Act? And to Paul, commenter number 7, while the water may be diluted, it has contaminated the wells of many people, and some of energy companies are acknowledging this fact by providing free drinking water to the people affected -- not, I would add, to the livestock and wild animals living in those areas.

[269. Lisa P.](#)

Amherst, NH

February 27th, 2011

11:25 am

"I'm not an activist, an alarmist, a Democrat, environmentalist or anything like that," Ms. Gant said. "I'm just a person who isn't able to manage the health of my family because of all this drilling."

Whether or not she cares to admit it, I think Ms. Gant has just become an activist.

[270.](#) reggie

Middlefield, New York

February 27th, 2011

11:25 am

Thank you, New York Times, for jumping into the ring and shining a light on the dark and toxic process of hydrofracking!! Perhaps now all those who think it's no big deal, will wake up to the reality of the threat it is to ANYONE who drinks water!! If you think you will not be affected because there is no hydrofracking in your immediate area, think again. ALL water comes from some natural source. Once that natural source is contaminated, and it eventually WILL BE contaminated either by an accidental spillage, illegal dumping of wastewater or natural runoff, there will be no turning back. HA!! Leaving the policing and regulating of the drilling in the hands of the industry itself???? Like leaving the mice (rats would be more accurate) in charge of the cheese factory!!

[271.](#) Mel Packer

Pittsburgh

February 27th, 2011

11:25 am

Terrific article that confirms what we in Pittsburgh have been documenting and, as a result, became the first city in the nation to completely ban fracking within our city limits by unanimous vote of our City Council. Our organization, MarcellusProtest.org (website) has also consistently pointed out the immorality and complete lack of social responsibility on the part of so many legislators who are owned by the drilling companies and would sacrifice our children's futures for campaign contributions, known as "bribes" in most nations. Many reputable scientists have confirmed that we have little reliable data to predict exactly how high the levels of cancer will be, the percentage of fetal abnormalities that will occur, the genetic mutations that could be created by a generation of exposure to these poorly regulated companies and the chemicals in our air and water. Hydrofracking must be stopped until there is conclusive scientific evidence that it can be done without short or long-term damage to the environment and to our population. I will not allow my children to be the experimental "lab rats" for the energy companies who seek only increased profits and the public be damned.

[272.](#) HIGHLIGHT ([what's this?](#))

christina

Brooklyn, NY

February 27th, 2011

11:27 am

Thank you so much for this report. The Delaware River Basin Coalition just held public hearings in Liberty, NY and Honesdale, PA regarding the Marcellus Shale Pipeline that will run right next to the Delaware river in Sullivan County, NY across from Wayne County, PA. This comes right on the tail coats of those meetings. I can only hope that the next time I drive through beautiful Sullivan County, NY I will not see so many "Friend of Natural Gas" signs in the front yards of so many residents.

Ms. Gant- are you reconsidering NOT being an activist or environmentalist? My sincerest wishes for the improved health of your children. If you did and continue to vote for small government, I can only wish you luck in picking yourself up by your boot straps.

[273. HIGHLIGHT \(what's this?\)](#)

[Justin W](#)

Philadelphia, PA

February 27th, 2011

11:29 am

Having spent the first 22 years of my life in Washington Co. PA, I can say that fracking is just the most recent under-regulated industrial practice that has damaged the environment in the area.

I grew up less than a mile from the site of an early Radium and Uranium refinery. Today, this Superfund site is a giant pyramid encased in lead and clay to prevent the radiation from escaping. Entire houses were put there because they were built of cinderblock made from the leftovers of the refining process. As a result, in the 1980's the small village of Strabane had one of the highest cancer rates in the country. The article is correct to state that most of the radiation can be blocked by a thin barrier. This is because the isotopes decay by emitting alpha and beta particles. However, if radioactive isotopes are ingested in drinking water, there is no barrier between the radiation and a person's cells. Therefore, doesn't it make sense to test all water that is released into streams and drinking sources for radiation when we know that there are naturally occurring radioactive minerals in the area?

My family home is also about 15 miles from the town of Donora, the site of the deadliest air quality incident in US history. There was an air inversion in 1948 that kept smoke from a zinc smelter from diluting with clean air. US Steel knew that this was a problem, but they continued to run the smelter. Victims who sued were barely compensated after years of litigation. People had to DIE for local regulations to be passed to prevent another disaster! The federal government took another 20 years to pass the Clean Air Act. How long will it take for comprehensive protection and transparent protocols for fracking practices to be enacted? My guess is long after the natural gas companies have made their money, greased the hands of politicians, bought off locals, repeated ad nauseam how they shouldn't be "punished" for creating jobs, and left the area to parasitize somewhere else. Who will be cleaning up their mess? It will probably be a crippled and perennially underfunded state DEP.

Throughout the region, it is not uncommon to find streams that are orange and acidic from mine drainage. Coal mining is nothing new in Pennsylvania, but we're dealing with the mess from the mines 100 years after many of them opened and years after the mining companies ceased to exist. The people who made obscene profits from owning mines are not paying for the subsequent remediation of wastewater. This is why it is vital for people to demand that companies pay up front for costs of future environmental cleanup, because all a corporation needs to do to relinquish its responsibility is to dissolve itself and funnel the money to the share holders.

What is it going to take to get people to understand that history is repeating itself? Owners of companies specializing in extractive industries come in, promise jobs and an increased tax base, rape the land, reap the profits and move out once it is no longer economically viable for them. This has happened in the area starting with logging, then mining, then oil extraction, now it's fracking and mountaintop removal. If we want something different, we need to fight for it. Natural gas development in the Marcellus Shale needs to progress in a manner that is SUSTAINABLE in the long run so that the people of the region aren't saddled with an unpaid environmental debt for generations! The time to do something is now!

[274.](#) Ruppert

Germany

February 27th, 2011

11:30 am

In comparison to other advanced countries, Americans have...

...less access to healthcare

...less access to the juridical system

...less access to public transport

...genetically modified food

And now the water?

[275.](#) scott r

empire, wi

February 27th, 2011

11:30 am

I wouldnt have expected anything less from your newspaper. Finally, a technology which domestically procure clean energy, creates good jobs and does so in a relatively safe manner compared with buying it from the middle east, pressurizing it and sipping across vast oceans and canals. People like you should be arrested for treason...you relentlessly push and push for .2ug/l (thats .2 parts per BILLION) mercury Hg water discharge standards)...NOT drinking water, Im referring to discharge standards...harmless. Your eco-cheerleading resonates with a tiny fraction of the population, mostly the few remaining readers you have, while the rest of us live in the real world who refuse to see our country recklessly handcuff ourselves while we watch US life expectancy continue to rise in the face of your weekly newfound dire threats, and we would very much appreciate it if you would just quietly and humbly present the other side for once so we can encourage job-producing activity once again. Perhaps a 5 page expose on the lethal hazards of paper making and newsprint ink and the fossil fuels it takes to drive your papers to and fro would better save our planet from the vast assortment of bogus science global "warming" evils etc., which you have concocted in search of Pulitzer prizes.

[276.](#) GeorgeF

Warwick, NY

February 27th, 2011

11:30 am

Money trumps all???

Consider this. You put up several solar panels, and maybe a wind turbine. You take the electricity from this to generate hydrogen from a reservoir of water. You take that hydrogen as you use it as fuel in some combusive process.

What's the costs?

What's the environmental impact?

Too load generation rate? Consider larger numbers and slow generation adding up to a large amount over a longer period but with 0 or near zero costs.

What's the problem? Why aren't we doing this?

[277.](#) Betsy Herring
Edmond, Oklahoma
February 27th, 2011
11:30 am

I live near Oklahoma City where Chesapeake has it's headquarters. McClendon has been building his empire at record pace here and now owns most of 20 city blocks which he has covered with huge buildings. He does decorate with nice Christmas lights every year. If this gradiosity is being done at the risk of toxic poisoning to little children in Pennsylvania, there is something wrong with this picture.

[278.](#) JerryP
Alexandria, VA
February 27th, 2011
11:30 am

Excellt article about a very important topic. As in the past the industry, with the collusion of the government, has been involved in the obfuscation of the facts. See for example Deceit and Denial: The Deadly Politics of Industrial Pollution by Gerald Markowitz and David Rosner and Doubt is Their Product: How Industry's Assault on Science Threatens Your Health by David Michaels. The NYTimes is providing an important public service by providing htis information

[279.](#) SM
NYC
February 27th, 2011
11:30 am

It's so disheartening that something as sacred and basic as water---for drinking, bathing, washing--- is violated and unprotected in this manner.

Once again, big business deep pockets' triumphs over the health of the working class and poor. If these gas bubbles were located in wealthier rural and urban areas, gas companies and governors would bend over backwards to ensure their wealthier, college-educated and more competitively employable constituents would be unharmed. Instead, the calculus is that radioactivity, cancer, asthma, and Lord knows what else are a fair trade for jobs jobs jobs.

Everyone, Facebook and forward this article to your family and friends. If you live in a state affected by this, contact your governor, your senators and representatives. Let them know you **WILL NOT STAND FOR THIS.**

Here;s to Josh Fox's "Gasland" and the New York Times for shining a huge spotlight on this public health crisis. Hopefully Mr. Urbina will keep shining this light throughout the year because it should be a presidential election issue; I know Mr. Fox is following up with "Gasland 2," which has been commissioned by HBO (bless them).

[280. John Hrvatska](#)

NY

February 27th, 2011

11:30 am

When the pollution that results from this drilling becomes too pervasive and too serious to deny; when the pollution is being blamed for a cancer epidemic, only then will the political leaders admit that there's a problem. The defenders and apologists of the drilling companies will be voted out of office and critics will be voted in. By that time the companies that created the problem will have been merged or dissolved or bankrupted, and the public at large will be left to deal with the cleanup. It may be that cleaning up of such a widespread mess won't even be possible. That the drilling companies are not being required to put away large amounts of money into a trust fund to handle the inevitable cleanup is a form of subsidy. Next time you hear a complaint about the subsidy that solar and wind and electric vehicles are receiving, remember this huge subsidy to the oil and gas industry. All energy is subsidized. It's just a matter of whether you pay your subsidies up front or at the end.

[281. Laura](#)

new york

February 27th, 2011

11:30 am

Thank you, thank you, thank you. Please keep a spotlight on this issue.

[282. KAE](#)

Upstate, NY

February 27th, 2011

11:30 am

I think it is important to note that a TV investigative report could not do justice to this subject. Neither could radio. This demonstrates the vital importance of newsprint reporting to our society. The Old Grey Lady has come through for us again. Thank you.

[283. Bad Wolf](#)

New Hope, PA

February 27th, 2011

11:30 am

When I read a statement like that of Kelly Gant, I feel tremendous sympathy and sorrow for her children. But then I read it again and came to a different conclusion. To wit, she said: "'I'm not an activist, an alarmist, a Democrat, environmentalist or anything like that," Ms. Gant said. "I'm just a person who isn't able to manage the health of my family because of all this drilling."

She has done nothing to support the warnings, joined the people actually trying to make a safer environment for her children, showed concern for the environment, or supported Democratic and activist initiatives to oppose hydrofracking. I assume her statement "I'm not...a Democrat.." would indicate that she has voted for Republican candidates who are hell-bent to suck every petro dollar out of the earth no matter what the cost to human life or the ecology in the area.

Perhaps, if Terry, in the interest of the health of her 14-year-old daughter and 11-year old son, had

joined, or at least supported the activists, ‘alarmists’ (who turned out to be truth-tellers, not alarmists), enlisted in the local and national environmental movement, and supported the Democratic initiatives against hydrofracking, as well as the “high air pollution” the area has suffered even before the new oil recovery program started, I could find more sympathy for her. Lord knows, there have been ever-more-critical warnings from climatologists and energy activists since the 1970s about what is happening to our environment today, though too many people were content to accept the faux reassurances of Republican and Conservative Democratic politicians representing the country’s dirtiest industries that they were in no danger (the latest I’ve heard from them is that build-ups in carbon dioxide in the atmosphere are not only NOT dangerous to the global climate, but are actually beneficial!!!).

While I feel tremendous sympathy for the children caught in this health, and life-threatening psychopathic drive for ever more profits, I have a hard time feeling sympathy for the Kelly Gants, who sat on the sidelines for decades, contributing nothing, until it is too late and her children must pay the price for her apathy and ignorance on the effects of fracking and other poisonous and climate-damaging rape of the earth in the name of just one more dollar of profit for people who already have more money than they can spend in a hundred lifetimes. Perhaps Ms. Gant could appeal to the corporations for aid - it should be an educational experience.

If Ms. Gant has learned the lesson of this incident, at least she should have the good graces to finally join the activists, alarmists, environmentalists, and Democrats to try to prevent this from happening to other mothers’ children. Or at least support these efforts with money, petition signing, and writing to her representatives.

Meanwhile, for those who invite the bulls into their parlor, or at least stand by passively as the herd invades their neighborhood - I don’t want to hear the aftereffects of their actions when their children, inevitably, get gored.

[284. OCULUS](#)

Albany

February 27th, 2011

11:30 am

This is a Broadway-dramatic piece if there ever was one--played to people who have never seen the inside of a geology (and perhaps logic) classroom. This is so lacking in perspective that it can only bring anxiety where it ought to bring thoughtful questions.

Please note the one point of context running through out these measurements: DRINKING WATER standards; the ne-plus-ultra standard. Dilution is mentioned often, but also as often, there are NO reports yet to confirm any of the bogeyman speculation lofted here.

So, this is repsonsible journalism?

Stoking the fear fires of the ignorant in advance of imminent release of the first meaningful data?
Who is polluting here?

And when that meaningful data confirms exactly what all of the state and federal regulators have been discounting all along, will the NYC Times do another 10,000 word piece proclaiming how over-wrought it was in screaming about NATURAL radiation and its dilution?

[285.](#) Louisa
State College, PA
February 27th, 2011
11:30 am

Thank you for writing this, from a Pennsylvanian.

[286.](#) bob
New York
February 27th, 2011
11:30 am

you can more than 100 stories for background and original, nationally-award-winning reporting on this at www.propublica.org/drilling

[287.](#) AC
Upstate NY
February 27th, 2011
11:30 am

It seems more important than ever NOT to eliminate the EPA as the R's want to do.

[288.](#) Steve
East Coast
February 27th, 2011
11:30 am

The gas well "in Philadelphia," on the home page of the NYT today, is not within 100 miles of Philadelphia !! Are you New Yorkers that uninformed about geography?? This in no way denigrates the remainder of the article's content, but I'm just amazed that anyone with ANY knowledge of geography or who has traveled up and down the East Coast could make such an error. This is laughable beyond comprehension. You might as well have said this is in Times Square. Philadelphia proper is as urban as NYC. The western suburbs are very wealthy with large estates, remnants of the rail baron estates. Think Greenwich, CT on steroids. Why do you think the main rail station in your beloved NYC is called "Pennsylvania Station" and not "New York Station?" Do you really think a natural gas well would be allowed within any reasonable distance of a major metro? Perhaps the school system in New York needs an overhaul.....

[289.](#) Robin
Wild, Wonderful West Virginia
February 27th, 2011
11:30 am

This is a problem in West Virginia as well and on top of it, we don't have enough inspectors NOW. With this increase in wells that will utilize hydrofracking, as well as decreased EPA regulations, WV could end up a national sacrifice zone, with leveled mountains, timbered forests and polluted waters. Almost heaven will become almost hell!

290. JLT

CT

February 27th, 2011

11:30 am

Fires of consumption blaze

Mortgaging my dying will

... We're still here!

Industry churns and builds

Useless objects that fuel the economy

... We're still here!

Mountains of trash and filth loom

Prospering higher and higher

... We're still here!

Dark skies spit poison rain

Funding a hedge up on Capitol Hill

... We're still here!

Water flows choked with corporate sludge

Spilling BP oceans to death

... We're still here!

Why?

Why do we multiply, consume, destroy, invade, infect, and pollute everything around us?

A cancer... eating away at the flesh of the world

Corrupting, growing, spreading our filth without the ability to stop

Is that what we are?

She turns and turns it over while the moon dances on

Till in her mind she knows that

One day she'll be so sick

So polluted, so hot with fever, and filthy

That the cancer will have nothing to feed on

Then she'll breathe a long sigh of relief

Wondering if our profits were worth it

Wondering what she'll do now that she's in remission

Wondering what kind of life will replace humanity

As she recovers and enjoys her victory over cancer she'll say...

"On Earth Day, some of them wanted to save me

They should have saved themselves

... I'm still here!"

[291.](#) J Andrews
Athens Ohio
February 27th, 2011
11:30 am

Josh Fox's 2010 documentary GASLAND tells the visually alarming stories of real people across America who are eye witnesses to fracking and its life-threatening consequences.

[292.](#) Marty
Fishkill NY
February 27th, 2011
11:30 am

Regarding "Extracting Gas from Rock", Frames 5 and 7

Frame 5

PROBLEM: Thousands of vertical joints in rock strata may connect, allowing drilling fluids to seep toward the surface.

QUESTION: Has consideration been given to the vertical joints allowing natural gas to seep toward the surface?

Frame 7

PROBLEM: The first batches of natural gas are flared off or vented into the atmosphere – as a potent greenhouse gas- rather than captured.

QUESTION: If natural gas may seep out at the surface [see Frame 5]

1. Will the environment be monitored for such seepage into the atmosphere and into the enclosed space of homes and businesses?
2. Will the monitoring include the piping and infrastructure installed to collect, process, store, and transmit the gas for markets?
3. Will the monitoring detect radioactive and toxic materials as well as methane and CO₂?
4. If methane, radioactive or toxic materials are discovered to be seeping to the surface through the vertical joints what are the prescribed initial, remedial and corrective actions to be taken.

[293.](#) [RS](#)
Columbus, Ohio
February 27th, 2011
11:30 am

This is how big business works when government doesn't do its job. This is how it has operated in foreign countries. Now it's doing the same here.

[294.](#) John
Pittsburgh
February 27th, 2011
11:30 am

Excellent information NYT. Pennsylvanians voted last fall for Tom Corbett who is a puppet for the lobbying group headed by Tom Ridge. Many of you may remember Mr. Ridge as the former director of Homeland Security. You know the one who brought us, the politically motivated terror alert system (code orange, red...) and keep some duct tape and plastic handy to cover your windows in case of a terror attack.

During the election Mr. Corbett's platform was based on several key points: no taxes for gas drilling, no oversight of gas drilling, cutting taxes and the jobs will be flowing into PA. The reality is that when you go into an area that has drilling you see license plates in the lots from Texas, Arkansas and Colorado. The local people are picking up the crumbs. Even in Alaska and Texas the gas revenue is being taxed in order to pay for the cost of some regulation enforcement. Not here in PA.

Meanwhile, in rural areas across the state land owners are taking \$1,500.00 per acre plus a small % of the gas revenue and giving up all liability from the gas drillers. That correct, if you own 1 acre of land they will offer you \$1,500 and about 1/110th% of the gas revenue as they calculate it in exchange for them having the right to pollute your land, groundwater and air.

Wake up PA our beautiful state is being raped. Once the wells are built we will be left with polluted groundwater, toxic radiation, high levels of birth defects and respiratory ailments. Meanwhile the Texans who are reaping the benefits will be off counting their money.

I'm off to look at a new house across the state line Ohio where they are taxing the revenue in order to fund environmental enforcement.

[295.](#) GWD
NYC
February 27th, 2011
11:30 am

a little germ here a little germ there before you know it we have an epidemic

[296.](#) FJP
NY
February 27th, 2011
11:30 am

#37 - please inform us of the "natural processes" that arise leading to gas intrusion into tap water and up through stream beds. I guess i should ignore that hydro-fracking just happens to be performed in surrounding areas and into adjoining shale beds.

The real opportunity to seize is alternative energy. You cannot sell the claim that major hydro-fracking operations, which are costly on all levels, are ground ready when alternative energy sources have been refined and enabled in areas all across the country.

[297. Rightforlife](#)

Deposit, NY

February 27th, 2011

11:30 am

I'll all for it. If it won't fowl up my water and roads. But whose to know?

There is too much obfuscation.

Patent rights? This makes not sense. Companies should declare what is in the fluid, and pay local governments up front for the costs of enforcement and investigations.

What's the big deal. It could be a win win.

I think the problem is greed.

And that is what I'm against.

[298. Jay Dees](#)

syracuse, ny

February 27th, 2011

11:30 am

All I have to say is that Gasland is up for an Academy Award tonight as best documentary. Watch it, learn it, TAKE ACTION. I wish to incriminate no one, but there will be night moves in Marcellus, NY.....

[299. HIGHLIGHT \(what's this?\)](#)

Sandy

Pennsylvania

February 27th, 2011

1:23 pm

I live in Pennsylvania near the Delaware Water Gap - the Delaware River has been named the most endangered river in America due to the gas drilling in the Marcellus Shale. The Delaware River is important to the tourist industry in this area. A polluted river will have a detrimental impact on tourism.

Our new Republican Governor, Corbett, received a lot of support from the drilling industry during the election. He's making good on what he owes them. On Thursday it was announced Corbett a Rendell policy requiring an environmental assessment for permits to drill in state parks. The policy required that the PA EPA review drilling permit applications for state parks and forests even where the state doesn't own the below-ground natural gas rights. That was quickly followed by an announcement air pollution controls at drilling sites would be suspended. Corbett also plans to lift Rendell's moratorium on new drilling on state lands where the state owns the mineral rights.

We are also being inundated with ads from the drillers extolling the money from drilling - farmers who now farm for the fun of it, retirees who have a more secure retirement, kids returning for the jobs. We are being brainwashed. Unless you seek it out there is little information about the damage from the drilling industry. This is an important article for getting information to a wider audience.

ProPublica is an excellent source of information. Here's a link to their archive:
<http://www.propublica.org...>

[300.](#)

Daniela

Pittsburgh

February 27th, 2011

1:23 pm

The city of Pittsburgh (its council) has banned drilling within the city limits. This is the only place in the US where fracking for nat.gas has been banned.

Today, Pittsburgh Post-Gazette Sunday's edition has a whole section on the Marc. drilling: ten articles, maps, and diagrams, including the address to an interactive map that shows satellite images of the wells and locations where permits have been issued.

When I viewed the Google images of the swimming pools and ball fields and green woods that share our mountains with Range Corporation, and their ilk, I felt the shadow of a familiar grief. These old symbols of health are contaminated for those of us that know the truth. Maybe it is only a Pittsburgh-er (who has been breathing clean air for the past generation only) who knows the end of this story.

We know the nat.gas that comes from our hills will fuel the world outside our borders. So we wonder if the money is worth the toxins. Some of the citizens outside the city have leased their land for \$9 an acre so that they can pay their current utility bills. Others still won't budge for \$1,500 an acre.

I'd like to legislate that the property that borders wells, compressor stations, collection ponds and tanks must be the primary residence of the executives of the drilling companies and their affiliates. They can choose between well water and public water. How about we give them a real estate tax break so it is more attractive to them and their families.

[301.](#) sc

PA

February 27th, 2011

1:23 pm

Republicans go apoplectic over the dire consequences of budget deficits and handing our children crushing debt (not unlike like the last administration's warning of WMDs in Iraq; "we must do something now!" was the cry). Yet there is nary a peep from them over the dangers of hydrofracking. Deficits come and go - but toxins and radioactivity have a tendency to stick around. And diluting them away won't cut it since the toxins are accumulative in living tissue. And worse we won't see the chronic effects the toxins until decades away - well after the horse has left the barn. Unless it is strictly regulated hydrofracking, a real WMD, will become the source for new Love Canals in communities throughout the country.

[302.](#)

d sidney
new york city
February 27th, 2011
1:23 pm

I have to ask myself, if drilling gives hundreds of thousands of people terminal illnesses that cost billions of dollars in medical care and tragic loss of life, is it worth a few thousand jobs and making a very few people an enormous amount of money??? If we emasculate the EPA... this is our future.

[303. Joanne](#)
Philadelphia, PA
February 27th, 2011
1:23 pm

When the water supply of 5% of the US population is at risk, why is this not an issue of national security? Shouldn't we be on orange alert? How many wars have been fought for the access to clean drinking water? If a "terrorist" was responsible for such actions this country would be gearing up for war. Why is a corporate entity exempt?

[304. bparno](#)
babylon
February 27th, 2011
1:23 pm

Over two hundred years ago one could kneel down at any stream of running water and drink with delight as the water was crystal clean and refreshing. Now one takes their lives into their hands as our industries not happy with their performance levels increase daily the dangers of just such an endeavor. They will poison this world for a profit, and drink bottled water until their own cancers consume them. What have they done to this most beautiful land that was a gift to all, the most beautiful garden planet in our solar system has been poisoned from sea to muddy sea.

[305. uuno](#)
Horseheads, NY
February 27th, 2011
1:23 pm

Drilling for natural gas is governed by the "Golden Rule" which is: The ones with the gold make the rules! Hydrofracting is NOT the way to harvest natural gas. There are safer methods to do this but it cuts into the profits if it is done in a safe way. People want to get rich quickly and not be concerned with the risks of doing it wrong. It boils down to GREED. Let the other "guy" pay the bill. If we continue down this path (more gas), we are doomed!! D. Quinn

[306. Rozmarija Grauds](#)
NE PA
February 27th, 2011
1:23 pm

We can live without gas an even without oil, but we cannot live without clean water.

[307.](#) structureequity
blythe, ca
February 27th, 2011
1:23 pm

Not one mention in a five page article about a documentary that pointedly speaks to the issue of fracturing and its effects: Gasland: A film by Josh Fox

[308.](#) Roncee
Kentucky
February 27th, 2011
1:23 pm

"the monitor in the Monongahela is placed upstream from the two public sewage treatment plants that the state says are still discharging large amounts of drilling waste into the river, leaving the discharges from these plants unchecked and Pittsburgh exposed."

Does anyone believe for a minute that this placement was by accident? What a joke! Someones hands are green and I'm not talking environmentally so, think of the color of money.

[309.](#) John Weiss
Marquette, MI
February 27th, 2011
1:23 pm

Maybe I missed it, but I didn't see a description of programs to monitor the levels of implicated toxins in the water ways and in the drinking water of the communities at risk. Same for the levels of toxins estimated by the measuring techniques. I would assume the dumping of contaminated water is associated with the levels of toxins in the waste water and the degree of dilution subsequent to mixing with the river/stream water.

If a measurement/monitoring program is in place, then I doubt significant health risk. If the program is not in place, then it should be instituted.

[310.](#) Chris Stout
Nashville, TN
February 27th, 2011
1:23 pm

Many of these environmental problems could be solved with Green Fracking. This is available from a company called Integrated Environmental Technologies out of Little River, SC. To my knowledge they are the only American company with EPA approval of a little known solution they produce called excelyte. There are already 10 of these machines in use in the Marcellus Shale. Essentially their process renders chemicals (while fracking) unnecessary. Their water solution fracks the rock, etc with a green solutions (water). It is a paradigm shift, thus the big oil companies have not made any big moves to use it over chemicals. This truly could eliminate most of the issues caused by fracking.

[311](#). Joseph-Ohio

Parma

February 27th, 2011

1:23 pm

Pay the landowner for not fracking then.

Pay them with energy dollars.

Allow the price of natural gas, gasoline, heating oil, electricity etc. to rise to accommodate the subsidy to not drill.

Or.....Drill Here, Drill Now, BUT INSTALL REGULATE AND ENFORCE TO PROTECT THE ENVIRONMENT. We can't be STUPID about this. Looks to me like the energy industry has to come to heel to the population's best interest - not just their own.

Unfortunately, no matter how I look at it - it appears to me that energy costs to the consumer will rise.

[312](#). Mr. Baranoff

Boston, MA

February 27th, 2011

1:23 pm

Thank you for this quality bit of investigative journalism.

It is infuriating, such a lack of greatly needed regulatory oversight. However, with the best democracy that money can buy, such horrific short comings are to be expected. "I hope we shall crush in its birth the aristocracy of our moneyed corporations which even now dare to challenge the government to a trial of strength and bid defiance to the laws of their country" Difficult to achieve when the industry writes the laws or disbands them all together.

Credit to the NYT, the timing of this article could not be better. The excellent documentary "Gasland" will be nominated tonight at the Academy Awards. For those who were interested by this piece I highly recommend the film, the visuals and personal accounts are astounding. Strong move to place this article on the day of.

[313](#). Gloria

Silver Spring, MD

February 27th, 2011

1:23 pm

I truly hope that in a hundred years we will have discovered another planet to live on as the earth will be uninhabitable. On the other hand, given the blind and selfish actions of companies that are rushing to extract as much money from the earth as possible, there probably won't be any life left on earth anyway. I am glad I won't be here to see it, but I fear for my children and grandchildren.

What a horror we are bringing upon ourselves!

[314. Resident](#)
Delaware Co., NY
February 27th, 2011
1:23 pm

To the Engineer in Midland Tx - "The bottom line is that the environmental agencies are somewhat to blame because they let companies do something that they have not proven is safe yet" - You seem to be saying that companies can drill safely but they're only going to do so if required by federal or state laws. So then we have to adequately fund these agencies so they can protect us not gut the EPA as the current congress would like to do. My problem with allowing drilling on or near my property is that in New York State we do not have the laws or funding for enforcement and cannot rely on gas companies to do the right thing.

[315. Joe](#)
Upstate New York
February 27th, 2011
1:23 pm

It's time that the truth begins to be told about this foul and fouling industry. What also needs to be exposed is how the money made goes into the hands of the few--remarkably NOT including State coffers (NY,PA)--and how the costs--ruined roads, traffic, increased demand for emergency, police, jail, medical services, rents which exclude long term residents, homeowner's property values down--are visited on local residents. The development cycle which has been characterized as boom/bust is in reality bust/bust for those who live where fracking strikes.

[316. ferdie14](#)
metro, ny
February 27th, 2011
1:23 pm

The more I read about this, the more appalled I am. Can watersheds withstand having hundreds of thousands of gallons withdrawn from them--daily--and pumped underground without seriously harming river life (not to mention people's drinking water)? Why isn't there perfect transparency on the exact nature and composition of every company's fracking fluids? (Please don't bring that weak proprietary argument. The list can be submitted to the EPA with a nondisclosure clause.) And now there's untreated radiation to worry about, in addition to well-water poisoning and wastewater spills? Is this not a long enough litany for more oversight? Pennsylvania disasters like the Centralia mine fire are confined to its borders, but this is not.

Respectfully, I find the Midland, TX, Engineer's statement to be ludicrous: "The bottom line is that the environmental agencies are somewhat to blame because they let companies do something that they have not proven is safe yet." The Clean Water provisions would have provided the needed regulation, but were subverted by Dick Cheney. If you are looking for someone to blame, there's your boy.

**Halliburton has disclosed data on what's being pumped into the shale in PA and TX.
<http://tinyurl.com/24p3juw>

[317.](#) Mary

NY

February 27th, 2011

1:23 pm

Kelly Grant, glad you finally woke up. Too bad your kids had to get sick to open your eyes

[318.](#) THOMAS J WILSON

BOSTON.MASSACHUSTTS

February 27th, 2011

1:23 pm

WHOMEVER DID ALL THE RESEARCH ON THIS SHOULD BE COMMENDED,THESE BIG GAS

COMPANIES AND THE RIGHT WINGERS MUST BE VERY UPSET TODAY.

THEY HAVE BEEN HIDING THIS FOR A LONG TIME.

THEY CONTINUETO RAPE THE AMERICAN PEOPLE,WITH THERE GAS PRICES,THEY GET RICH FROM THE POOR AND MIDDLE CLASS,AND DON"T GIVE A DAM WHO SUFFERS FROM THERE EFFECTS

[319.](#) [Patricia](#)

Wisconsin

February 27th, 2011

1:23 pm

Of course, this is what killed the birds and fish in Arkansas. First the birds and fish, then our children. Thank you Ronald Regan for removing regulation. Thank you Republicans for hoaring for the wealthy corporations that only, ONLY want to make more and more money.

Our children will get sick and die and we will blame the government for not doing it's job by regulating. What a horrible world you Republicans are creating!

[320.](#) Brad

Upstate NY

February 27th, 2011

1:23 pm

Putting corporate profits before the health of the people is dangerous to the health of human beings and the planet.

Government regulators will take significant action when the citizens they are supposed to serve speak up.

What are you doing about this issue, folks?

[321.](#) rms

brooklyn

February 27th, 2011

1:23 pm

energy companies have denied there is a problem when you can light your water on fire coming out of the tap (see the film Gasland). the only thing they understand are fines, HUGE fines.

[322.](#) jonathan
trumansburg,ny
February 27th, 2011
1:23 pm

Thank you so much for this well researched article. It goes a long way towards debunk the myth of natural gas as a clean energy source

[323.](#) Patrick Ryan
Brooklyn, NY
February 27th, 2011
1:23 pm

If you are one of the 15 million people (including residents of NYC, Philly, much of NJ and DE) whose drinking water comes from the Delaware river, please let your feelings on hydrofracking in the Delaware river watershed be know to the authority who is charged with its regulation: the Delaware River Basin Commission. The DRBC is currently receiving comments on it's draft regulations for gas drilling in the watershed, commenting is open until March 16. You may comment here: <http://parkplanning.nps.gov...>

[324.](#) Bill
Juneau, AK
February 27th, 2011
2:32 pm

Another risk, not covered in your fine article:

Cornell Univ Prof Howarth's preliminary study warns that total greenhouse gas (GHG) impact of electricity generation from natural gas, produced by hydrofracking shale, may be greater than the total GHG of coal generation, because of fugitive methane (CH₄, the primary constituent of natural gas) emission via geologic pathways incidentally opened via the rock-fracturing process, as "collateral damage":

<http://www.scribd.com...>
<http://www.eeb.cornell.edu...>
<http://www.eeb.cornell.edu...>
[http://www.eeb.cornell.edu/howarth/GHG%20update%20for%20web%20--%20Jan%202011%20\(2\).pdf](http://www.eeb.cornell.edu/howarth/GHG%20update%20for%20web%20--%20Jan%202011%20(2).pdf)

[325.](#) Alice Z
Brooklyn, NY
February 27th, 2011
2:34 pm

Thank you for publishing an important article, and what I hope will be an important series of articles. Radioactive wastewater is just one of many major problems associated with this Halliburton technology of drilling for natural gas. Cornell Prof. Robert Howarth's preliminary comparative study of the greenhouse footprints of fossil fuels shows that fracked natural gas is as dirty, or perhaps even dirtier than coal. Also, though fracking does bring profits to some residents, these profits are short-lived. Since about 80% of the gas is drilled in the first 1-3 years of a well's

life, fracking is a boom and bust industry -- the hardest type of industry to be absorbed by small communities. After about 10 years, when drilling leaves a town, the town is left to pay for environmental clean-up, health problems, and the loss of most of its traditional economies. In addition, our nation currently has an oversupply of already-drilled natural gas, one of the reasons natural gas prices are extremely low right now. In fact, the new Spectra 30-inch pipeline that is planned to go through Bayonne, Jersey City, under the Hudson near the Holland Tunnel, and finally into Manhattan, (entering at the West Side Highway and Little West 12th Street), is needed by industry as an outlet to export markets so that the price of gas will be pushed up through higher demand. Ironically, though industry is trying to tell us we need all this natural gas, studies now show that we can convert our energy grid to sustainables by 2030, using EXISTING technologies. Rather than continue the \$500 billion subsidies our government currently gives to the fossil fuel industry, rather than spend billions of dollars constructing new and dangerous natural gas pipelines, rather than building new wastewater treatment plants that may not even completely rid drilling wastewater of toxins, we must build a sustainable energy infrastructure and turn our country into a true leader of the 21st century.

[326.](#) Jeanne McMullen
Pittsburgh, PA
February 27th, 2011
2:34 pm
To Duane,

The majority of residents in the city of Pittsburgh get their water from the Allegheny, however residents south of the Monongahela, and thousands in southern suburbs, get their water from the Mon. Believe me, I know where my water comes from.

The Allegheny is now having its own problems now with all the dumping. So those folks are not safe either. And bottled water is not regulated, not tested. We are a region at risk.

Jeanne

[327.](#) Holly
Wellsboro, Pa
February 27th, 2011
2:35 pm

What a poorly researched article which is full of deception. The graphics are absurd. To draw a 40 mile radius around a well head that is 6" wide and show the whole area is contaminated with radiation demonstrates the lack of factual reporting in this article.

I live in Wellsboro, Pa. We don't have the issues that this article tries to have naive people believe. The reality is that the gas companies are great neighbors, very community oriented and to the highest degree environmentally friendly. In contrast much of our economy is also farming, which dumps tens of thousands of tons of fertilizer on the ground and lots of soil run off. Is that okay? Or is attacking the gas industry good to sell papers and attacking the family farmer something that doesn't gain revenue traction for the times.

I seriously have to question the agenda of the "journalists" of this article. It seems to me that there is something serious amiss with their professionalism.

[328.](#) Ann Dixon
Philadelphia
February 27th, 2011
2:36 pm

I thank Mr. Ian Urbina for his thorough and well researched article. Fracking is indeed a highly toxic practice. There is not currently a good way to dispose of wastewater. The U.S.'s energy demand is often used as a means of justifying fracking. However, gas and oil are marketed globally. There is no guarantee that gas fracked here will stay here. So far, there has been a moratorium on drilling in the Delaware River Basin. This can all change soon. The DRBC has issued new rules for fracking in that watershed. Public comments about the new rules are only being accepted until March 16th. For more information, and to submit comments, visit www.protectingourwaters.com

[329.](#) Nibs913
New Jersey
February 27th, 2011
2:36 pm

It's only a matter of time - this WILL affect New York City's drinking water. The rural population, though many are actively fighting against it, don't have the real power to stop this. Many people are for it because they've been bribed with these insidious prospecting contracts. The gas companies can buy anything and anyone. They've bought the EPA, and if they're allowed to drill at all, they'll buy their way around any regulations. Start freaking out, people.

[330.](#) Alan Gregory
Conyngham, Pa.
February 27th, 2011
2:36 pm

Nearly always overlooked in media reports about gas drilling is this fact: Drilling involves clearing forest, both for the drill pad itself and the roads leading to and from drill sites. Such construction fragments and destroys wildlife habitat, particularly habitat needed by forest-interior species. It is little wonder that so many of migratory songbirds, like the wood thrush, are in trouble population wise.

[331.](#) [A. Meer](#)
New York, NY
February 27th, 2011
2:37 pm

FINALLY! the mainstream press is telling us that fracking is polluting our water supply - thus our food, our wter, our children. no brita filter can take out the radioactivity from our water. is it a surprise that cancer is an epidemic?

[332.](#) wildplaces

Bedford, NY

February 27th, 2011

2:38 pm

What is left out of the article and the public argument is the danger of VERTICAL hydrofracking extraction of natural gas...while the horizontal hydrofracking is exceedingly dangerous to our communities, our drinking water and our ecosystems due to their increased scope and reach, the vertical option (endorsed by former governor Paterson of NY when he put a moratorium on horizontal hydrofacking) uses similar dangerous extraction techniques in a more concentrated topographic area with higher frequency of wells per square mile.

Contrary to what one commenter here has noted, this battle has been going on for far longer than a year in New York, Pennsylvania and the West.

The movie Gasland has helped draw attention to the dangers of hydrofracking natural gas extraction after significant grass roots environmental battles had been waged, and the movie has brought this crucial battle to the mainstream more than any other publicity.

Despite what the energy companies and their supporters claim about the benefits of natural gas production, the writer of this article Ian Urbina is incorrect when he cites environmental groups as an impetus for hydrofracking production of natural gas. Anyone behind the scenes of a grass roots environmental group (I am active in such a group) will find a vigorous debate right now on this very subject, and those in states affected by this hydrofracking extraction are on the forefront of the side against promoting gas obtained through hydrofracking of any kind.

Those whom would claim in their comments here that the methane releases are the result of natural processes have either not seen the movie Gasland, or lack first hand experience at one of these sites. The release does not occur prior to the hydrofracking extraction, and the residents and ecosystem are severely impacted afterwards. Josh Fox's Gasland highlights such as case in Colorado where an entire local river corridor is impacted this way resulting in the death of birds, fish and other wildlife.

[333.](#) RBT

Rensselaerville

February 27th, 2011

2:38 pm

I fail to see the connection between DRINKING water standards for contaminants and WASTE water levels. Nobody is drinking the waste water, just as nobody is drinking the waste water that is poured down your house drain. Do you think that blue stuff in your toilet is good to drink?

[334.](#) [Scott](#)

Cape Cod

February 27th, 2011

2:39 pm

This is why investigative journalism is so critical - who else would get this information to the public? The gas or drilling industry? The regulators? Doubtful. An equally detailed and informative article could be done on all the road building going in on public forests, plus the drilling pads, wastewater ponds, etc etc. Gas is a relatively clean fuel and the hydrofracking process is

technologically amazing and can probably be done properly and safely - but there is such a rush to capitalize on the profits that, as usual, it is the public that suffers from inadequate oversight. You can argue all you want about what levels are harmful to the public but the bottom line is how you would feel (or maybe DO feel) drinking the water from the affected rivers. I'm certainly glad that I don't - and I hope Pennsylvania's new Governor does.

[335. Patrick Walker](#)
Factoryville, PA
February 27th, 2011
2:40 pm

I too wish to commend the Times strongly on a timely and well-researched article. By timely, I mean that I hope this article--and the whole planned series--have a sobering effect on the Delaware River Basin Commission, who seem all too eager to join in PA's folly and rush ahead with a young, experimental set of technologies, whose safety credentials have NOT been established by peer-reviewed science. The Council of Scientific Society Presidents, representing 1.4 million scientists in over 100 disciplines, wrote to President Obama making precisely this point.

Of course, one article can't take up everything relevant item, but I do wish the article had cited and commented on the 20% of drilling wastewater that an AP article said couldn't be accounted for at all.

Also, I wish the Times article had stressed that many environmentalists never supported, or have backed down from supporting, natural gas as a "clean" transition fuel. The PA Sierra Club, which now supports a moratorium, is a telling example. A compelling reason for this reversal is the methane leaks from extraction, which the EPA had underestimated by a factor of 9000(!). If Cornell prof Robert Howarth's study, now being peer-reviewed, is correct, natural gas is as bad as, and possibly far worse than, coal as a greenhouse offender. These leaks are potentially fixable, but it will take billions of dollars, and nobody in PA's current drilling rush is making the slightest effort to fix them. Nor is coal production being curtailed, further giving the lie to the idea of natural gas as a clean substitute. And even if the methane leaks were fixed, and coal production curtailed, we'd still have only a relatively clean fossil fuel, not real climate-change solution.

While no energy solution is problem-free, natural gas so far is looking pretty bad, and in no way has established its science credentials as a real solution. Clearly, the unholy marriage between fossil-fuel industries and government--perhaps at its worst in PA--forbids the slowdown on gas and frank, science-based analysis needed to arrive at viable energy solutions.

[336. jcrane](#)
davison
February 27th, 2011
2:40 pm

Trying real hard to understand why when we buy gas or oil from another country that all their people aren't dead or in the hospital. How can they extract the same products that we are too dumb to extract without polluting our entire country? What do they know that we just can't seem to grasp?

[337.](#) Karl
Pittsburgh
February 27th, 2011
2:40 pm
At least Corbett should make them pay

[338.](#) Paul Baumann
Brooklyn New York
February 27th, 2011
2:42 pm

We can go to the moon; we can send unmanned drones to kill our enemies, and we can have created sustainable energy many times over in the decades of our addiction to fossil fuels. T Boone Pickens and gas industry and landowner coalition's lie has begun to be exposed in a very public forum at long last, and the people of New York will have a chance after all to work at avoiding the consequences that are being borne in many other states.

T Boone Pickens stated on Jon Stewart's show that hydrofracking has been practiced for decades. Taken at face value, that is a true statement. But in fact it is a lie of terrible proportion, and this article makes significant progress in exposing that lie for what it is.

High volume slickwater hydrofracturing of horizontal wells as it is being practiced, for example in Pennsylvania, and as it will soon be practiced in New York unless the trajectory we are on changes dramatically, is not even a decade old.

Unfortunately, starting with the 2005 Energy Act, what has been allowed to happen in about a dozen states is that a practice with unstudied consequences has been in use.

This article focuses on the subject of the toxic and radioactive industrial waste materials produced by this process. That is one of many dire consequences, each of which includes its hidden costs. The article does mention the dramatic effects of air pollution in Wyoming; rising asthma rates in Texas. I won't count the millions of gallons of water and the millions of truck trips and the weight of the toxins that the diesel engines pour into the air in a short comment. The rate at which methane is allowed to leak nation wide is 5%. That is completely unnecessary, there is a fix that pays for itself within five years, but federal law doesn't require it, nor does the dSGEIS. I hope that the author is familiar with the Cornell study that taking this leak rate into account, and the fact that methane is a worse greenhouse gas than carbon dioxide, found that natural gas is a more toxic form of energy overall than coal, ranking it second in the three most toxic forms of energy.

After the air pollution required to get the well drilled and fracked, we come to the contamination of aquifers, to the migration of the toxic fluid and the naturally occurring toxins underground into our drinking water. Again, Mr Pickens will state that he knows of no example of such a migration. The falsity of that claim rests on a thin layer of circumstance- on the one hand, precious little scientific study has been done, and on the other hand, you must ignore the proof, as well as the abundant evidence that can be found everywhere this practice has been allowed. For proof, one example is the USGS study that established the vertical migration of gas from a storage well thousands of feet deeper than the Marcellus itself, up through the Marcellus and into an aquifer in PA, ruining permanently a drinking water supply for dozens of homes. The gas in the storage well was nonnative, and identified in the water, along with it gas that had been picked up on its way through

the Marcellus.

The geology in our southern tier is known to be brittle and riddled with faults. Only 40% of that wastewater makes its way out (and then often right back into the watershed with its many toxins.) The pressure under which wells are fracked is tremendous.

That gas will be down there until we have not only studied this process thoroughly, but designed methods that are first proven to provide a failure rate far below the unacceptable current rate. There is no reason for the asthmas, the cancers, the endocrine system problems, and the irredeemable degradation to aquifers. Also we need to take into account the decimation of property values, and the damage to existing local businesses.

The dSGEIS is not capable of the protection that the people of New York need, this very new and extremely dangerous practice needs attentive study and its own specific set of regulations, however long that takes, the gas will be there. The Barth economic report makes it very clear that the hidden costs associated with this practice under the current climate of under-regulation and lack of oversight make this a long term terrible deal for the people and the state.

I hope that the Times article will start to establish the need to put the brakes on and scrap the dSGEIS, study this process and this situation, and start from the ground up with regulations that address the new hazards this new method poses.

[339. Ochsucker](#)

Times Square

February 27th, 2011

2:42 pm

I hadn't realized that beneficial byproduct of methane extraction is removal of small amounts of benzene from the polluted soil. As for the radon, the our crust and groundwater sits upon a molten radioactive pile, and it shapes our evolution and destiny, despite our revanchist middle brow predilections.

[340. William Germain](#)

Denver, CO

February 27th, 2011

2:43 pm

This article makes absolutely clear that existing regulations are -- for various reasons -- not protecting people and the environment effectively. One simple measure -- which would probably still fall short of a solution -- would be to make drilling companies legally responsible to adequately pay for the use and treatment of water and the air exposed to the drilling process. It is obvious that the industry is externalizing impacts to water and air at the expense of others. Of course, this type of requirement would translate to higher consumer prices and make natural gas less competitive... and consumers might choose to support alternative energy solutions...hmm... which might actually turn out to be more beneficial in the long run. Paying the true cost of this activity is the only equitable and responsible solution for industry and consumers alike, and the only way to curtail the drilling bonanza that's happening all across the country.

The promise of 100 years worth of natural gas supply is alluring, but let's not ignore the costs. Let's

push for greater financial responsibility in the drilling industry, to keep them honest. And, for ourselves and future generations, let's not squander our most vital resources, the water we drink and air we breathe, for the sake of satisfying our cheap energy addiction.

[341.](#) NOnc

NY, NY

February 27th, 2011

2:43 pm

This is a MAJOR issue, and the New York Times presented it in a well-researched and clear manner. So why are half the highlighted comments from those that support 'fracking', when the overwhelming majority of the comments posted are concerned with the 'potentially significant risks', the presence of radioactive material found in treated wastewater, and the conflicts of interests between health and safety and the political campaigns of these legislators? This gives the false impression that as many people are in favor of 'fracking' as are against it!

How many times do people have to hear, 'Industry officials say they are not concerned.' to realize they are playing with our lives? Industry officials elect our government!

Thanks for finally writing about this!

[342.](#) Vane Lashua

Beacon, NY

February 27th, 2011

2:44 pm

Oil and gas come from inevitably limited, toxic pools. The extracted raw oil and gas must be transported, further processed and consequently burned (at our peril) to be used at all.

"Energy companies" (BP, Chevron ...) and their techno-minions (Halliburton, Schlumberger, ...) could tap an unlimited source of safe, clean energy and with conventional, in-place, (and safe) conversion, feed it to the existing electrical grid using the same technology and engineering they now use to extract oil and gas. And the source is no more than 10 miles from everywhere on earth. Huh?!

It's called "deep geothermal" and, because it DOESN'T involve the extraction and continual transport, conversion, storage, re-transport and burning of a limited resource with \$(trading value) and \$(lobbying), it doesn't get much attention or is pooh-poohed as possibly causing earthquakes (like gas wells couldn't!).

Deep geothermal. Even Halliburton says they can do it! (see <http://thnktnk.net/drill.html>)

[343.](#) william

brooklyn

February 27th, 2011

2:44 pm

BR from NY (Comment #37) has this exactly right. We have a major energy source nearby our major east coast cities. Closing it off to all development simply means that our energy needs will be

met by sources in faraway countries that have little or no labor and environmental regulations. While we develop viable alternative energy in the long term, we need to stop outsourcing our pollution to countries that are far less equipped to deal with it than we are in the short term. Anyone who has ever been to Nigeria or Kazakhstan knows what I'm talking about. The focus of liberal activists with a truly global perspective should be on imposing effective environmental regulations on natural gas extraction, not banning it outright.

[344.](#) Rudy Franchi

Los Angeles

February 27th, 2011

2:44 pm

Great that this dangerous process is exposed, but now that it's in the spotlight, the Republican led House will make greater efforts to defund the EPA, especially the dollars being used in the long term investigation of the dangers of fracking. They might be wearing blinders, but they can still swivel their heads (if they can get their nose out of their lobbyist supplied feedbag.)

[345.](#) DK

Dallas

February 27th, 2011

2:45 pm

Said the regulator: "We can't be too tough on them because they may stop reporting violations."

Are you serious??

This is a consequence of the Reagan-inspired campaign to eliminate regulations. He made regulations which protect the health of the public an evil thing. Here is another example of why we need to keep close tabs on corporations. It goes along with the recent ones from the banking/finance sectors.

Thanks a lot, Ronnie.

[346.](#) [BlueMoose](#)

Binghamton NY

February 27th, 2011

2:45 pm

Meanwhile the gas industry has launched a campaign aimed at preventing the movie "Gasland" that highlights the dangers and destruction of gas drilling from winning a Academy Award. They have been pressuring members of the Academy to not vote for it.

[347.](#) Callie

NYC

February 27th, 2011

2:45 pm

"State regulators and drillers show that the dangers to the environment and health are greater than previously understood."

Yes, and the reason for this is that paid liars for the gas companies have a mission to dupe the public and the news media.

Anyone want to try to set their water on fire?