A pivotal EPA study provided the rationale for exemptions that helped unleash the fracking boom. The science was suppressed to protect industry interests.

By Neela Banerjee

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covered in bleeding sores. More recently, Ryan became incontinent. Testing by state regulators and a researcher at nearby Duquesne University showed the well water had deteriorated since gas extraction started but no proof of the cause. The state recently began another round of testing.

Latkanich is a single parent. He's jobless and blind in his right eye from brain surgery. "I worry about my son getting sick, about my getting sick and what would happen to him if I did," he said. "I'm doing this all alone. And I keep asking myself, 'How do we get out?'"

Living with Fracking in Washington County, Pennsylvania

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For Latkanich and all those who believe their water has been tainted by fracking, there are few remedies. Congress took away the most powerful one in 2005, prohibiting the Environmental Protection Agency from safeguarding drinking water that might be harmed by fracking and even denying the regulator the authority to find out what chemicals companies use. That provision of the Energy Policy Act was justified by an EPA study about fracking into coalbed methane reservoirs, completed under the George W. Bush administration, that concluded that fracking posed no risk to drinking water.

Concerns about the study emerged from the outset, including a 2004 whistleblower complaint that called it "scientifically unsound." Now, InsideClimate News has learned that the scientists who wrote the report disagreed with the conclusion imposed by the
At EPA, "there was a preconceived conclusion that there's no risk associated with hydraulic fracturing into coalbed methane. That finding made its way into the Energy Policy Act, but with broader implications," said Chi Ho Sham, the group manager of a team of scientists and engineers for The Cadmus Group, the Massachusetts firm hired to do the report. "What we would have said in the conclusion is that there is some form of risk from hydraulic fracturing to groundwater. How you quantify it would require further analyses, but, in general, there is some risk."

The fracking provision, widely known as the Halliburton loophole, after the oilfield services company once run by Bush's vice president, Dick Cheney, is among a host of exemptions to federal pollution rules that Congress and successive administrations have given oil and gas companies over the last 40 years.
This statute is designed to protect the public from hazardous air pollutants, such as benzene and lead compounds, by establishing limits on each pollutant and requiring companies to report emissions, in the aggregate, from connected facilities. Oil and gas wells (and related facilities) are connected by roads and pipelines but are exempt from submitting aggregate totals for each pollutant.


This provision requires companies engaging in construction or large earthmoving activities to get a permit for stormwater runoff by submitting plans that show the measures they will use to protect surface water, such as streams and wetlands, from pollution. Oil and gas production sites, such as well pads, are exempt from the permit and planning requirement.


This law mandates the proper disposal of hazardous and non-hazardous solid waste. A 1987 EPA report described numerous toxic and radioactive substances in the waste generated by oil and gas production. But Congress and the EPA have designated oil-field waste as non-hazardous, exempting industry from mandatory safeguards.

SOURCE: Natural Resources Defense Council

Winning these exemptions is at the heart of a successful strategy by the fossil fuel industry and its allies in Washington to limit environmental oversight of companies'
Pruitt is a staunch ally of fossil fuels, and his agency is moving on several fronts to quash science that documents the oil industry's contributions to climate change and other forms of pollution, the first step to rolling back regulations, critics said. "I've been caught off-guard by how fast and diverse the attacks are on scientists within the government and how science is used," said Gretchen Goldman, research director for the Center for Science and Democracy at the Union of Concerned Scientists.

The EPA did not respond to multiple requests for comment made over two months. Former EPA officials from the Bush administration involved with the study would not comment on the record. Cadmus also would not comment and referred inquiries to the EPA.

The consequences of loopholes built on disputed science have rippled through the country during the latest energy boom. Domestic production of oil and gas has surged, creating thousands of jobs and boosting company profits—and leading to thousands of complaints in states such as Pennsylvania, Texas and North Dakota that drinking water is being contaminated. But, in the absence of federal protections, there is only a patchwork of often-lax state regulations. If it were not for the Halliburton loophole, the EPA could have developed standards for the entire country. State rules could have
from a farmer in Deemston, 35 miles south of Pittsburgh. Latkanich was a counselor at the Washington County jail, often working with murderers. His wife was a nurse at a state penitentiary. They bought the rural tract as a haven from their tough jobs and built a dream house on a hill, with a wide front porch overlooking a two-acre pond.

But by 2010, the marriage had ended. His wife had left for a nearby town with his two older sons. Latkanich underwent an operation to remove a benign brain tumor, which, because of its size and location, threatened his life. While he was in a coma, his girlfriend gave birth to Ryan. She was addicted to cocaine and opioids, and the newborn spent three weeks going through withdrawal. The state placed Ryan in foster care.
The two wells on Latkanich's property are among 1,655 that have been hydraulically fractured in Washington County since 2004. Halliburton fracked the first commercial well in the United States in 1949. Technology has improved over time, getting a big boost from more than $135 million in federal grants beginning in the 1970s to spur development of oil and gas in shale formations. In the 1990s, fracking was used to extract coalbed methane, or natural gas, touted then as the next great investment for the industry.
Dick Cheney
Former Vice President of the United States

- Richard Bruce Cheney was born in Lincoln, Neb., in 1941 and moved to Wyoming with his family when he was 13.

- Matriculated at Yale University in 1959 but left because of poor grades to finish his studies in political science at the University of Wyoming.

- Served as chief of staff for President Gerald Ford and then as the sole congressman from Wyoming.

- In 1990, as secretary of defense under President George H.W. Bush, advocated for military action to drive the Iraqis from Kuwait without Congressional authorization; Bush turned to Congress instead.

- Worked as chief executive officer of Halliburton from 1995 to 2000, given the job in part because of his extensive Middle East contacts; the company won $1.5 billion in government contracts during his tenure.

- Served as vice president of the United States under President George W. Bush from 2001-2009.
coalbed methane. The LEAF suit alleged that federal oversight of fracking under the SDWA was needed because the process was in fact a form of underground injection and state regulation was insufficient.

LEAF's success scared the industry and politicians allied with it, said Hannah Wiseman, a law professor at Florida State University. They didn't want federal rules that would have required a UIC permit for each frack job, potentially slowing energy extraction and choking revenues.

In 1999, Sens. James Inhofe (R-Okla.) and Jeff Sessions (R-Ala.), longtime allies of the oil industry, introduced a bill to exempt fracking from the Safe Drinking Water Act. A year later, the EPA announced a study to determine if fracking into coalbed methane reservoirs affected drinking water.

Industry got a huge boost when Cheney, the CEO of Halliburton, became vice president in 2001. At the time, fracking was unknown to the broader public. But an energy policy task force Cheney helmed in spring 2001 highlighted fracking's potential, and it recommended a comprehensive exemption to the SDWA for all types of fracking, not just for coalbed methane. The EPA cautioned against an overly broad approach.

EPA Administrator Christine Todd Whitman wrote to Cheney on May 4, 2001, "I strongly suggest limiting the recommendation to the problem we know about—hydraulic fracturing for coalbed methane. Otherwise, before the (coalbed methane) study is completed, we are potentially walking into a trap because we don't yet know the environmental consequences of the broader exemption, or why it is needed."

A draft version of the coalbed methane report was released in 2002 for public comment. Industry and environmental activists alike remarked on the disparity between the details of the study, which noted the possibility of threats to drinking water from fracking with toxic chemicals, and the overall conclusion, which stated that fracking was entirely safe. Industry wanted the details changed; activists wanted the conclusion amended to reflect the details.

**EPA's Own Contractor Finds Fracking Poses Risks; EPA Dismisses It**

Cadmus took over the report in late 2002 from the original contractor. The project faced obstacles from the outset, according to EPA documents and Cadmus staff. The
the EPA urged Cadmus to include an oil industry study that had not been peer-reviewed. When Cadmus staff resisted, the EPA manager asked a Cadmus scientist, "Can't you say something positive about it?" the scientist recalled.
The industry study fell by the wayside. But the EPA changed parts of the working draft that suggested fracking for coalbed methane could pose risks to drinking water, according to the documents and Cadmus scientists.
A March 3, 2004, EPA agenda entitled "Hydraulic Fracturing Project Status" listed among the tasks "Soften conclusions and ES [executive summary]."
In drafts of the executive summary, typically a report's most widely read section, the authors referred to potential threats to public health as the reason for the study. "The goal of this Phase I study was to determine if a threat to public health exists as a result of USDW [Underground Sources of Drinking Water] contamination from
The Cadmus scientists said they realized over time that their findings about risks to underground drinking water diverged from what the EPA wanted. The scientists determined that fracking does pose some risk to drinking water. They concluded that monitoring of fracking activities and more information from industry would be needed to quantify the risk. The EPA decided the study's conclusion should be that fracking did not pose a threat to groundwater and therefore did not require further study or federal oversight.

The Cadmus scientists came to believe that abiding by the EPA's conclusion violated their standards of integrity. "If you say there is no risk associated with hydraulic fracturing, and we see risk, you either didn't do a good job or you're lying," Sham said. "The data and analyses tell us there is risk associated with it, and we were asked to report there is no risk, and we can't say that."

The EPA routinely hires contractors to conduct studies, and the firms' names are generally tucked away in appendices or acknowledgements. Contractors appreciate a mention because if the studies are well-regarded, they serve as a form of marketing. The 2004 coalbed methane study notes the use of a contractor but does not identify Cadmus.

"We had no power over the final report. The only power we had was to take our names off it," said a Cadmus team scientist who declined to be identified because of concerns about job security.
Pits collect fracking waste, though the majority of the fracking fluids stay underground.

**HAZARD**

If the well sheath fractures or otherwise fails, carcinogens in fracking fluids (such as benzene and formaldehyde) could leak into the groundwater.

**A sheath made of several layers of steel and concrete is used to protect the aquifer.**

1. A well is drilled horizontally into the shale. A casing is inserted in the borehole and sometimes surrounded with cement.
2. A perforating gun blasts small holes into the shale.
3. Oil and natural gas are extracted via the well, along with fracking waste.
4. The high-pressure mix creates small fissures in the shale, releasing hydrocarbons, which are collected via the well. The sand keeps the fissures open for a continuous "bleed."

Diagram not to scale

SOURCE: InsideClimate News research

PAUL HORN / InsideClimate News
The EPA's inspector general launched an investigation into Wilson's complaint. But the inquiry was closed after the Republican-controlled Congress passed the Energy Policy Act in 2005, codifying in law the conclusion of the coalbed methane study and exempting fracking from the Safe Drinking Water Act.

Back in Pennsylvania, A Boy's Health Problems Grow

In mid-2012, Chevron Appalachia hydraulically fractured two wells on a hill about 400 feet behind Latkanich's house. They produced gas by winter, and Latkanich got royalty checks that at first were as high as $11,000 a month. He paid off legal bills and his mortgage.

But problems soon cropped up that grew increasingly alarming.
Bryan Latkanich  
*Former corrections counselor*

- Born in Charleroi, Penn., in 1971 and grew up in Monessen, Penn., both within 12 miles of his current home in Deemston
- Has a degree in criminology from Indiana University of Pennsylvania
- Worked as a counselor for inmates at Washington County jail, focusing on violent offenders, including murderers
- Bought his 33 acres in Deemston in parcels starting in 1998; built his home in Deemston in 2001
- Signed with Chevron Appalachia in 2011 to extract natural gas from his property
- Wells on his property were hydraulically fractured in mid-2012
- Father of three boys, ages 7 to 18
- Blind in right eye after 2010 brain surgery and is on disability
Latkanich's home to the nearby municipal water system and provided him with a large outdoor tank instead. The DEP tests did not show anything wrong with the drinking water, and the company took the tank away.

Still worried even after the 2013 tests, Latkanich began to have bottled water delivered. Because he's on a fixed income, Latkanich and Ryan use it only for drinking. They still cook, brush their teeth, bathe and wash dishes and clothes in well water. Ryan's mother left in August 2013.

In December 2016, Ryan started to soil himself almost daily. He was 6, a chubby precocious redhead with perpetually askew glasses. One day, he soiled himself at school. "Charlie was the smartest kid in the class. He was making fun of me in front of the whole class. He said I stink," Ryan recalled. He doesn't have many friends at school now. "I'll never forget that."

Medical tests found nothing wrong with Ryan. Peer-reviewed science has been mixed so far about the links between fracking and incontinence or gastrointestinal problems among residents who use nearby well water. Latkanich called the state DEP to test his water. He also contacted John Stolz, director of Duquesne University's Center for Environmental Research and Education.
The results have been ambiguous. Unlike most people, Latkanich had an independent lab test his water in 2011 before fracking began, giving him a baseline. In its February
Baseline Data: August 2, 2011

- Calcium: 1.90 milligrams per liter
- Iron: 0.03 milligrams per liter
- Sodium: 238.38 milligrams per liter
- Strontium: 0.18 milligrams per liter

Duquesne Test: July 27, 2017

- Calcium: 93.43 milligrams per liter
- Iron: 0.13 milligrams per liter
- Sodium: 510.38 milligrams per liter
- Strontium: 3.01 milligrams per liter

Measurements are in milligrams per liter.

Source: InsideClimate News research

Paul Horn / InsideClimate News
samples, both Chevron and the DEP concluded that Chevron Appalachia's operations did not affect Mr. Latkanich's water," Veronica Flores-Paniagua said in an email. "We understand that Mr. Latkanich has recently raised the same concerns again regarding his well water. As always, Chevron Appalachia will continue to fully cooperate with the DEP in this matter."
Scott Pruitt
Administrator of the EPA

• Born Edward Scott Pruitt in 1968 in Danville, Kentucky, to a devout Baptist family

• Elected attorney general of Oklahoma in 2010 and 2014; sued the EPA 14 times in efforts to pare back federal regulations

• Has denied that carbon dioxide from fossil fuel combustion is the primary driver of climate change

• Helped convince President Donald Trump to pull the U.S. out of the Paris Climate Agreement

• Has dismissed academics from EPA science advisory boards and replaced them with industry representatives, issuing a directive that scientists who receive research funds from the agency are disqualified from serving as advisors

• As EPA administrator, Pruitt has revoked the Clean Power Plan and its limits on carbon dioxide emissions and paused limits on methane emissions from new oil and gas sites and from landfills, among a spate of regulations and standards he has slowed or halted
never harmed water," said Greg Dotson, a law professor at the University of Oregon and former lead energy policy staffer for Rep. Henry Waxman of California, the top Democrat on the House Energy and Commerce committee during the Bush era. For members of Congress, "if you wanted to do the right thing, you needed to have data on your side, and this study deprived you of an analytical basis. ... The oil and gas guys always used it. It was instrumental to their winning the debate."
The Trump EPA does not try to hide its intention to roll back rules to help oil and gas. Before taking the reins at EPA, Pruitt built a career based on deep ties to industry. He led a political non-profit funded in part by the petrochemical billionaires Charles and David Koch. He sued the EPA more than a dozen times as Oklahoma attorney general over new pollution standards. As EPA administrator, he has halted or slowed several rules affecting oil and gas.

He has moved to undermine the scientific underpinnings of major rules in part by removing independent academics from the agency's scientific advisory panels that review studies on issues such as fracking. In their place, the Pruitt team has put forth the names of corporate representatives, many drawn from the oil and gas industry, who deny prevailing science on public health hazards such as climate change and ozone.

**EPA Issues New Report, but Change Is Unlikely**

In December 2016, as the Obama administration was about to leave office, the EPA issued a new report, which stated for the first time that fracking in some cases had contaminated drinking water. It identified possible risks to groundwater unless certain safeguards are implemented. Cadmus was the government contractor who helped conduct the study, and this time, its name is repeatedly mentioned in it.
The new study won't change anything on the ground unless Congress acts to repeal the Halliburton loophole, which is unlikely for the present.

Latkanich expects no help from the government. It allowed all he sees around him to happen, he figures. He has a reputation with Chevron as a troublemaker because he monitors and criticizes its practices. Early on, he grew suspicious of the company when he learned from a neighbor that a Chevron contractor had dumped wastewater into a stream on the other side of his property. The company was cited by the state, but Chevron and state regulators did not tell Latkanich about the violation, he said.
and complex for it to handle. He gets a disability check and about $550 monthly now in royalties for his two gas wells, so he doesn't have the money to hire private firms. "This farm is ruined," he said.
"Forever," said Ryan, who had come into the kitchen from running around outside. "Buy me out and I'll move somewhere where there isn't fracking," Latkanich said. "Japan?" Ryan offered. "Because I don't think there's fracking there."

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