

Contaminated Inquiry

How a University of Texas Fracking Study Led by a Gas Industry Insider
Spun the Facts and Misled the Public



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Executive Summary

Universities have an important role to play in critical public policy debates. They can serve as trusted, independent sources of information. The scholarship they produce can help to guide policymakers, inform public opinion, and ultimately shape policy.

Unfortunately, when it comes to the issue of horizontal hydraulic fracturing for natural gas, or “fracking,” there are signs that this public trust – and the extraordinary influence that goes with it – is being abused by universities around the country.

The Public Accountability Initiative (PAI) is analyzing this trend in a series of reports on the gas industry’s influence on academic scholarship; this is the second in the series. In the first, PAI analyzed a report issued by the University at Buffalo’s Shale Resources and Society Institute (SRSI) on fracking’s environmental risks and found that it suffered from a number of critical shortcomings.¹ The report stated that the incidence of major fracking-related environmental impacts had gone down, when it had actually gone up; lifted entire passages from a pro-fracking report the same authors had written for the Manhattan Institute; and displayed extreme pro-industry bias. PAI also noted that the report’s authors had strong industry ties.

This report examines another university study of fracking, issued by the Energy Institute at the University of Texas (UT). The February 2012 report, “Fact-Based Regulation for Environmental Protection in Shale Gas Development,” analyzed various aspects of the fracking issue, including environmental impacts, regulation, and public perception.

The report was given major billing by UT, promoted as independent of industry, and presented at a prominent academic conference. The press release accompanying the report made strong claims about the report’s findings, with the headline “New Study Shows No Evidence of Groundwater Contamination from Hydraulic Fracturing.” Media outlets followed this lead, printing headlines such as “Study: Fracturing no threat to groundwater” (*Houston Chronicle*).² The natural gas industry cheered the report’s findings. Fracking’s threat to groundwater is one of the most controversial issues in the debate surrounding the drilling practice.

There were significant flaws in the report, however, just as there were with the UB report. In particular, there is an extreme disconnect between the press release’s bold pronouncements and the actual content of the UT report:

- **A rough draft, not ready for public release.** Though the report was introduced at an academic conference, the UT report does not appear to have been ready for public release. Two of the report’s main sections are marked as rough drafts. In the “Environmental Impacts” section, numerous citations are missing, including some that are marked in red ink.
- **Industry-friendly groundwater contamination claim rests on misleading, selective language.** The finding highlighted in the press release – that hydraulic fracturing *itself* has not been linked to groundwater contamination – relies on a semantic sleight of hand that the student newspaper at the University of Texas, the *Daily Texan*, has recently criticized for contributing to “misreporting” of the

¹ The full report is available at <http://public-accountability.org/2012/05/ub-shale-play/>

² “Study: Fracking No Threat to Groundwater,” *Houston Chronicle*, February 16, 2012.

issue.³ The claim ignores a number of contamination incidents related to aspects of fracking other than the actual fracturing of the rocks. The report itself also raises nearly two dozen significant environmental issues related to fracking that are largely ignored in the press release.

- **Inaccurate claims of peer review.** The Energy Institute’s director, Ray Orbach, claimed that the report was “the first peer-reviewed analysis” of the environmental impacts of fracking in the Energy Institute’s annual report, but the report did not undergo an adequate editing process, much less conventional peer review. Similarly, UB claimed that its study was “peer-reviewed” in its press release, but later retracted that claim. Both reports, incidentally, were reviewed by representatives of the Environmental Defense Fund.



used by Brownlow in his estimates. 1870 Mm³ (1,520,000 AF) (Error! Reference source not found.). Projections suggest that water use will peak in 2024 at 58 Mm³ (48 kAF) (Error! Reference source not found.).

An unfinished draft? The above edit appeared in the report issued by UT. The report included eight other “missing reference” edits, as well as 54 sources cited that were missing from the source list.

Conflicts of Interest Driving an Industry-Friendly Message?

There are striking similarities between the UT and UB reports: bold, definitive, industry-friendly claims highlighted in the press release but not supported by the underlying report; evidence of poor scholarship and industry bias; and dubious and inaccurate claims of peer review.

The authors of each report also have extremely strong industry ties, raising questions about whether the reports’ industry-friendly message is being driven by these conflicts of interest. These ties may be even stronger in the case of the UT report; its principal investigator, who presented the report and appears to have shaped the message highlighted for the press, has a particularly glaring conflict of interest that may have affected the overall reception of the report if it had been properly disclosed:

- **Undisclosed Conflict of Interest.** The UT report’s principal investigator, Charles “Chip” Groat, failed to disclose in his report bio or in his presentations on the report that he is a board member of Plains Exploration and Production (PXP), an oil and gas company that is heavily involved in fracking. Groat earned more than double his University of Texas salary as a PXP board member in 2011 – \$413,900 as opposed to \$173,273 – and he has amassed over \$1.6 million in stock during his tenure there. Groat has been linked to unreliable research in the past. He resigned as head of the US Geological Survey in 2005 during a major research scandal surrounding a study of the possibility of water infiltration at Yucca Mountain.
- **PXP’s Fracking.** PXP is currently participating in a joint venture with Chesapeake Energy in Louisiana’s Haynesville Shale, which is studied in the UT report, and is also mired in controversy in

³ “Baking & Fracking,” *Daily Texan*, July 2, 2012. Accessed at: <http://www.dailytexanonline.com/viewpoints/2012/07/02/baking-fracking>

Los Angeles, where it is fracking the largest urban oil and gas field in the country. 300,000 people live within 3 miles of the field, heightening the possibilities of public health risks. As part of litigation surrounding its Inglewood oilfield, PXP has been required to conduct a study of fracking that includes a section on groundwater contamination.

- **Advisory board industry ties.** UT's Energy Institute also has strong ties to industry through its advisory board. Advisory board members have ties to Hess, ConocoPhillips, Laredo Petroleum, and other companies involved in fracking. ConocoPhillips recently donated \$1.5 million to the University of Texas, which is being administered through the Energy Institute. Energy Institute documents suggest that it also attempted to recruit ExxonMobil CEO Rex Tillerson, who recently blamed "lazy" journalists for "not doing their homework" about fracking.

UT repeatedly claimed that its report was independent of industry. UB made similar claims, despite the report author's industry ties. These universities clearly see their independent brand as a valuable tool in establishing the credibility of their research, and these claims likely gave the reports more media traction than they otherwise deserved.

But when research is authored by someone who is on the industry's payroll, as was the case with Groat, such claims are grossly misleading. The lapse is significant in the case of the UT report, given the public importance of the issue, the report's bold, industry-friendly claim on such a controversial topic of inquiry, and the disconnect between the report's dismissal of groundwater concerns and the completeness and quality of the underlying research.

The University of Texas bears special responsibility for touting the report's supposed independence and promoting its industry-friendly message. By making an extensive public relations push around the report, it advanced misinformation, misled the public, and ultimately abused the public trust of universities. Reports such as these may help to support fundraising operations at these universities, but they come at significant public expense. UT would do well to safeguard against such abuses in the future, rather than further forfeit its institutional credibility.

This is the second report in PAI's series on the fracking industry's influence on the academy. The first examined the University at Buffalo Shale Resources and Society Institute May 2012 report on fracking's environmental effects.

“[T]he use of nuanced denials is unlikely to increase public confidence in the shale gas industry.”

– *Energy Institute report contributor Ian Duncan, “Fact-Based Regulation for Environmental Protection in Shale Gas Development,” page*

I. UT Report Findings & Press Coverage

The University of Texas Energy Institute report, titled “Fact-Based Regulation for Environmental Protection in Shale Gas Development,” is a review of media coverage, public perception, and scientific investigations into environmental impacts of fracking and a summary of state regulations and enforcement.⁴

The report was released in February 2012 at the American Association for the Advancement of Science conference and billed as an independent, academic inquiry into fracking. According to the UT Energy Institute website, the goal of the report was to “inject science into a highly charged emotional debate” and provide a “fact-based foundation” upon which policymakers can base their decisions.⁵

The Energy Institute’s contribution to the fracking debate falls short of these goals in important ways, and in fact appears to have taken advantage of the university’s independent brand in order to publish industry spin dressed up as objective science. This is most significant in the press release accompanying the report, which ran with the following headline: “New Study Shows No Evidence of Groundwater Contamination from Hydraulic Fracturing.” This finding was highlighted in a wave of press coverage of the report, but it is based on a highly selective and misleading analysis of the 414-page report, which identified many environmental risks associated with fracking.

There are also significant shortcomings in the report itself. It does not appear to have been ready for a public release: critical sections of the report are marked as a rough draft, numerous references are missing from the report, and red, bolded edits appear in the report. The report fails to analyze several important cases of fracking-related environmental impacts, includes an incongruent personal anecdote in its analysis of fracking’s effects on well water, and suffers from the use of biased language and rosy analysis of the potential of shale gas as an energy source. This section reviews these shortcomings in depth.

Pro-Industry Spin in Press Release

The press release accompanying the Energy Institute report spins the report’s findings in a way that favors the natural gas industry by asserting that there is no link between fracking and reports of groundwater contamination.

⁴ Charles G. Groat and Thomas W. Grimshaw, Fact-Based Regulation for Environmental Protection in Shale Gas Development, The Energy Institute at The University of Texas at Austin, February 15, 2012, Part 1, p. 7. Accessed at: http://energy.utexas.edu/images/ei_shale_gas_regulation120215.pdf

⁵ Shale Gas Regulation, The Energy Institute at the University of Texas at Austin, February 15, 2102. Accessed at: http://energy.utexas.edu/index.php?option=com_content&view=article&id=151:shale-gas-regulation&catid=1:features&Itemid=146



New Study Shows No Evidence of Groundwater Contamination from Hydraulic Fracturing

The press release's lead paragraph focuses on this lack of a "direct" link:

VANCOUVER, British Columbia — Hydraulic fracturing of shale formations to extract natural gas has no direct connection to reports of groundwater contamination, based on evidence reviewed in a study released Thursday by the Energy Institute at The University of Texas at Austin.

The resulting press coverage was nearly uniform in focusing on the "no contamination" hook from the press release. A sampling of headlines:

- **Fracking Pollution Claim 'Unproven'**
John von Radowitz, *Press Association Newswire*, February 15, 2012
- **Study: Fracturing no threat to groundwater**
Vicki Vaughan, *Houston Chronicle*, February 16, 2012
- **It's not fracking's fault, study says**
Alan Boyle, *Cosmic Log – MSNBC*, February 16, 2012
- **UT study: No direct link found between oil fracking, groundwater contamination**
Associated Press, February 17, 2012
- **UT Austin study says fracking hasn't contaminated groundwater**
Dallas Business Journal, February 17, 2012

At the *Dallas Star-Telegram*, editorialist Mike Norman noted that industry had been quick to spread the report's message:

The natural gas industry understandably showed an "I told you so" pride last week when the Energy Institute at The University of Texas at Austin released initial results from a continuing study of shale gas development. "New study shows no evidence of groundwater contamination from hydraulic fracturing," the institute's news release said. Industry representatives quickly spread that message across the Internet.⁶

A gas company as far flung as South Wales pointed to the study, shortly after its release, as reason to dismiss environmental concerns surrounding fracking.⁷

⁶ Mike Norman, "UT 'fracking' study dispels one drilling worry, raises others," *Dallas Star-Telegram*, February 23, 2012. Accessed at: <http://www.star-telegram.com/2012/02/23/3758663/ut-fracking-study-dispels-one.html#storylink=cpy>

⁷ Peter Law, "Fracking firm banks on new study for 'safety' of drilling," *Western Mail*, February 17, 2012.

In order to announce “no evidence” of groundwater contamination, the Energy Institute parses its words carefully. Its focus on the lack of a “direct connection” downplays instances of contamination associated with fracking operations caused by spills and faulty well casings as well as other environmental and safety risks. To be clear, the Energy Institute is not asserting that there is no evidence to connect gas production by fracking to contaminated water, but rather that water has been contaminated in the past due to phases of gas extraction other than the actual fracturing of rocks.

Presenting the study to the American Association for the Advancement of Science, lead author of the Energy Institute study, Chip Groat said:

We found no direct evidence that hydraulic fracturing itself – the practice of fracturing the rocks – had contaminated shallow groundwater or was a cause of concern. However that doesn’t mean that there aren’t other parts of the process of shale gas development that could get things you don’t want in shallow groundwater or surface water. Just as there have been things about conventional oil and gas development that could do similar things and have, in fact, done similar things.

So I guess the bottom line...is that most of what we have seen happening related to shale gas development that impacts the environment is at or near the surface: surface effects, spills, leaky ponds, that sort of thing, or upper well bore cement casing issues, and where those are below the surface, which they are, we don’t see them, and that needs more attention, because the inspectors tend to see things at surface and not as much at depth and we’re recommending that more attention be paid to those.⁸

From this bottom line Groat and the Energy Institute derived the press release headline: “New Study Shows No Evidence of Groundwater Contamination from Hydraulic Fracturing”, which in the media became: “It’s not fracking’s fault, study says.”^{9,10}

The *Daily Texan*, the University of Texas student newspaper, took Groat and the Energy Institute to task for this semantic sleight of hand by suggesting that saying fracking does not cause contamination is similar to saying that baking a cake does not make a mess in the kitchen:

Does baking a cake make a mess in the kitchen? No, not literally. The chemical changes that occur when cake batter sits in a hot oven do not directly cause spills, greasy counter tops and other reasons for clean up.

Most bakers, however, will respond to that question about a mess more broadly. They will tell you “baking a cake” starts when they line up flour, eggs and sugar on a counter, ends when they confront a sink full of dirty dishes and definitely makes a mess.

The editorial went on to conclude that “by using the headline ‘no evidence of groundwater contamination’ in its press release, the Energy Institute oversimplified its own study’s conclusions and thereby contributed to the media’s misreporting about fracking.”¹¹

⁸ News Briefing, American Academy for the Advancement of Science, February 16, 2012. Accessed at: <http://www.eurekalert.org/aaasnewsroom/2012/watchbriefing.php?page=7>

⁹ Gary Rasp, “New Study Shows No Evidence of Groundwater Contamination from Hydraulic Fracturing”, The Energy Institute at The University of Texas at Austin, February 16, 2012. Accessed at:

http://www.utexas.edu/news/2012/02/16/energy_institute_hydraulic_fracturing_groundwater_contamination/

¹⁰ Alan Boyle, “It’s not fracking’s fault, study says”, MSNBC Cosmic Log, February 16, 2102. Accessed at: http://cosmiclog.msnbc.msn.com/_news/2012/02/16/10426765-its-not-frackings-fault-study-says?lite

While perhaps not connected to the actual fracturing of rocks required to obtain shale gas, there have, in fact, been many instances of fracking-linked groundwater contamination. In some cases, water was poisoned by toxic fracking fluids, the “surface effects, spills, leaky ponds, that sort of thing” Groat refers to; in others, the contamination is the intrusion of natural gas into water supplies, usually caused by the “well bore cement casing issues,” Groat also acknowledges.

- Between 1982 and 1984, “residual fracturing fluid” migrated into a water well on a Ripley, West Virginia property that had been leased for gas drilling, rendering its owners’ water “unfit for domestic use.”¹²
- In 2009, Cabot Oil & Gas contaminated the water supply in Dimock in northeastern Pennsylvania. The gas company provided bottled water to Dimock residents for a year and were ordered to pay \$11.8 million for a new water line for the town before the Department of Environmental Protection backed down and the Environmental Protection Agency started providing the water.¹³
- In April 2011, an equipment failure at a Chesapeake Energy well in Bradford County, Pennsylvania caused a blowout that spilled thousands of gallons of flowback water from fracking into fields and a tributary of the Towanda River. The EPA found contamination in three wells near the blowout site.¹⁴
- In June 2012, Chesapeake Energy agreed to pay \$1.6 million to families in the first Marcellus contamination lawsuit settled without a nondisclosure agreement. Inadequate cementing resulted in methane migrating into the Bradford County, Pennsylvania families’ water supplies.¹⁵

The Energy Institute study was published not long after the EPA’s December 2011 report confirming that fracking was the cause of groundwater contamination in Pavillion, Wyoming.¹⁶ The Energy Institute report addresses the Pavillion case in a footnote, claiming that the fracking operations there were not “normal”:

Apparently in some cases, such as the Pavilion [sic] area, Wyoming, fracturing has been performed at depths shallower than normal for shale gas wells, which are typically more than 2,000 or 3,000 feet deep.¹⁷

The EPA’s findings, however, are not mentioned.

Discussing the kind of word choice the Energy Institute employed in the study’s release, report contributor Ian Duncan, the author of the environmental section, criticized the gas industry for making the same “no contamination” claim that the Energy Institute chose to headline its press release: “The gas industries

¹¹ “Baking & Fracking,” *The Daily Texan*, July 2, 2012. Accessed at: <http://www.dailytexanonline.com/node/14070>

¹² See “Documents: A Case of Fracking-Related Contamination”, *The New York Times*, August 3, 2011. Accessed at: <http://www.nytimes.com/interactive/us/drilling-down-documents-7.html>

¹³ See Steve Reilly, “Feds to expand Dimock, Pa. water investigation”, *Gannett*, January 19, 2012. Accessed at: <http://www.pressconnects.com/article/20120119/NEWS01/201190421/Feds-expand-Dimock-Pa-water-investigation>

¹⁴ See “Michael Rubinkam, Pollution found in Pa. wells near site of blowout”, *Associated Press*, June 24, 2011. Accessed at: <http://www.startribune.com/printarticle/?id=124491053>

¹⁵ See Susan Phillips, “Chesapeake to pay \$1.6 Million for Contaminating Water Wells in Bradford County”, *State Impact*, June 21, 2012. Accessed at: <http://stateimpact.npr.org/pennsylvania/2012/06/21/chesapeake-to-pay-1-6-million-for-contaminating-water-wells-in-bradford-county/>

¹⁶ Investigation of Groundwater Contamination near Pavillion, Wyoming, Dominic C. DiGiulio, Richard T. Wilkin, Carlyle Miller, and Gregory Oberly, U.S. Environmental Protection Agency, xii-xiii, December 8, 2011. Accessed at: http://www.epa.gov/region8/superfund/wy/pavillion/EPA_ReportOnPavillion_Dec-8-2011.pdf

¹⁷ *Id.* at Part 2, p. 18 note 4.

[sic] assertion that no ‘definitive evidence’ has been found of ‘direct’ water contamination from ‘deep’ hydraulic fracturing is undoubtedly true if the sentence is parsed pedantically.”¹⁸

The fact remains that to the layperson, fracking is not simply the “particular technology that is applied to the deeper extremity of gas (or oil) wells,” as Duncan writes, but rather is “a broad term that covers the drilling and completion of the well and all the associated activities.” It is this confusion that fracking proponents rely on, and it can be seen in instances such as when Senator James Inhofe (R.-Oklahoma) said in a Committee on Environment and Public Works hearing: “[W]e do approximately 35,000 wells a year – nearly a million wells, without one documented case of groundwater contamination.”¹⁹

In the Energy Institute study, Duncan says: “[T]he use of nuanced denials is unlikely to increase public confidence in the shale gas industry.”²⁰ The University of Texas would have done well to heed that advice when releasing this report.

A Rough Draft

Though the report was billed as a definitive study of fracking and groundwater contamination, the study is clearly marked as a “draft” in two critical sections: Part 4, “Environmental Impacts of Shale Gas Development,” and Part 5, “Regulation of Shale Gas Development.” The “Environmental Impacts” section forms the basis for the bolded claim of no link between groundwater contamination and fracking, but it is clearly marked as a “draft.”

4 Environmental Impacts of Shale Gas Development

This section is still in draft form.

Rough draft—please do not cite without permission.

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“Draft” disclaimers in section 4 (top) and section 5.

Missing Sources

An adequate list of sources would seem to be a basic requirement for a “fact-based” investigation of fracking’s environmental impacts – especially one that is essentially a literature review – but there are a number of problems with the report’s source list. The list of sources in the “Environmental Impacts” section has no coherent organization, though it is roughly grouped by sub-section. A review of the paper reveals that senior contributor Ian Duncan cites a total of 54 sources in the body of the report that appear

¹⁸ *Id.* at Part 4, p. 6.

¹⁹ James M. Inhofe, U.S. Senate Committee on Environment and Public Works, December 8, 2009. Accessed at: http://epw.senate.gov/public/index.cfm?FuseAction=PressRoom.PressReleases&ContentRecord_id=70289be8-802a-23ad-479d-ca2d6f6b36cd

²⁰ Charles G. Groat and Thomas W. Grimshaw, Fact-Based Regulation for Environmental Protection in Shale Gas Development, at Part 4, p. 6.

nowhere in his list of references. Some of these sources, “Nicot and Scanlon (2012)” for example, are integral to Duncan’s argument. He cites that study of water usage in fracking operations seven times in the section without providing further information, such as the title or publication information.

Additionally, there are nine instances where either Duncan or an editor, noticing an unsubstantiated claim, inserted the word “REFERENCE” in all capitals, and often in red typeface, at the end of the sentence, such as in the screen capture below:

2012 as on the order of fifty years), then the usage for shale gas will be on the order of 2% of the total. Nicot and Scanlon (2012) have made a detailed projection of water-use for the Eagle Ford play assuming an area for the play of 53,000 km², an area significantly larger than that probably



used by Brownlow in his estimates. 1870 Mm³ (1,520,000 AF) (**Error! Reference source not found.**). Projections suggest that water use will peak in 2024 at 58 Mm³ (48 kAF) (**Error! Reference source not found.**).

It is odd that the University of Texas and the Energy Institute would release the study and comment so extensively on it in the media, given that it was in such an unfinished state.

Other Environmental Findings

The report identifies significant causes for concern that do not support the press release’s rosy message. Energy Institute’s researchers report 22 issues related to fracking’s environmental impacts, although only the “no contamination” claim was highlighted in their press release. Among the other concerns:

- On a large scale, construction of a number of well pads in shale gas areas may result in land clearing (estimated at 34,000 to 83,000 acres) with resulting loss of forest and fragmentation of habitats.
- Unplanned releases of natural gas in the subsurface during drilling may result in a blowout of the well or migration of gas below the surface to nearby houses, where the gas may accumulate in concentrations high enough to cause an explosion. Subsurface blowouts may pose both safety hazards and environmental risks. A major problem in these events is the limited ability to discern what is happening in the subsurface.
- Management of leaks and spills at the well pad site and at off-site facilities such as gas pipelines and compressor stations for shale gas drilling is similar to conventional gas development. But shale

gas wells also make use of hydraulic fracturing fluids and associated chemical additives, and they have impoundments for storage of flowback and produced water, both of which may increase risks of spills and other releases. Chemical additives may pose a higher risk in their concentrated form while being transported or stored on-site than when they are injected into the subsurface for hydraulic fracturing.²¹

Pro-Fracking Bias

The introduction to “Fact-Based Regulation for Environmental Protection in Shale Gas Development” reveals the researchers’ pro-fracking bias. The Institute estimates the amount of shale gas in the United States as 862 trillion cubic feet, a number it says will “continue to grow with additional resource information” even though in January 2012 the U.S. Energy Information Administration slashed their estimate of the nation’s recoverable shale gas reserves to 482 trillion cubic feet, “substantially below the estimate of 827 trillion cubic feet” it had made in 2011.²² The report’s authors, unaware or unconcerned that their figures are out of date, editorialize: “Most would consider this greatly increased availability of natural gas as a highly favorable development for the public interest,” adding “[t]he US and the world are in great need of the energy from shale gas resources.”²⁴

Energy Institute director and lead author Chip Groat weaves a number of industry talking points into his sections of the study, calling shale gas a “game changer” and its development “essential to the energy security of the US and the world.”²⁵ His co-author Ian Duncan even quotes an industry front group in a section of the report ostensibly about the environmental impact of fracking:

The Independent Petroleum Association of America, and industry Trade Association has suggested (with strong justification it would seem) that hydraulic fracing is a technology that is critical accessing [sic] the US’s oil and gas resources in a cost effective manner (IPAA, 20XX).

Duncan also invokes industry buzzwords in his introduction, averring that shale gas exploitation has not only been acclaimed as a “game changer” by energy analysts, but that it deserves that title, and terming the 21st century fracking boom a “revolution.”²⁶

While a primer on shale gas and its place in the American market and popular consciousness is appropriate introducing a chapter on fracking’s environmental effects, Groat and Duncan’s editorializing about its value, positive or negative, is not. For a study whose purpose is to provide for “fact-based” regulation of shale gas drilling in order to protect the environment, it is antithetical to take for granted and introduce the study with assertions that fracking is essential and in the public interest.

Anecdotes and First-Person Narrative

The study’s environmental chapter “sets out the critically review available scientific information addressing [environmental concerns engendered by shale gas production].”²⁷ Criticizing researchers and

²¹ *Id.* at Part 2, pp. 30-32.

²² *Id.* at Part 1, p. 4.

²³ AEO2012 Early Release Overview, U.S. Energy Information Administration, January 23, 2012. Accessed at: http://www.eia.gov/forecasts/aeo/er/early_production.cfm

²⁴ Charles G. Groat and Thomas W. Grimshaw, Fact Based Regulation for Environmental Protection in Shale Gas Development, February 15, 2012, at Part 1, p. 4.

²⁵ *Id.* at Part 1, p. 6.

²⁶ *Id.* at Part 4, p. 4.

news outlets for using anecdotal evidence of groundwater contamination rather than peer-reviewed literature, Duncan points out that a series of *New York Times* articles “documenting” contamination may be subject to biases and assumptions: “Perusal of the New York Times articles suggests that the main source of this ‘documentation’ comes via internet bloggers and interviews with individuals who often have a vested interest.”²⁸

Shortly thereafter, Duncan suggests his own unsubstantiated hypothesis as to how reports of well water contamination and fracking might be linked (and that reports of well contamination might not be “group hysteria”), slipping into the first person as he does so:

During the drilling and hydraulic fracturing process of the shale gas well, numerous pressure transient pressure jumps occurs [sic]. Each one of these radiates pressure waves that vibrate nearby water wells. As a result, particles from the casing wall and well bottom are agitated into suspension causing the cloudiness, red, orange or gold colors reported by well owners. I have personally experienced our water well in Virginia turning a rust-brown color for days after our well was worked on.²⁹

Elsewhere, after asserting that it “may be scientifically justifiable” to call environmental arguments against fracking “two huge lies” and “preposterous”, Duncan criticizes a fracking opponent or opponents’ demeanor in an unspecified online video:

There are U-tube [sic] videos circulating where at least one academic opponent of hydraulic fracturing in a state of high agitation, express [sic] his concerns in a manner not conducive for rational discussion.³⁰

These instances of low-quality writing do not appear to be worthy of the billing that the University of Texas, the Energy Institute, and subsequent media coverage gave the report. The authors’ tone and reliance on the kind of anecdotal evidence and conjecture they fault in their opponents significantly limits the study’s credibility.

Claims of Peer Review

Energy Institute director Roy Orbach lauded the success of “Fact-Based Regulation for Environmental Protection in Shale Gas Development” in the institute’s 2012 mid-year report:

The report represents the **first peer-reviewed analysis** of the environmental impacts of hydraulic fracturing of shale for the production of natural gas. As such, I believe it will serve as the **cornerstone for all subsequent investigations** and as a benchmark for any EPA regulations that may be forthcoming. [emphasis added]

It is unclear how the report could be considered peer-reviewed, since key sections are still labeled as drafts, as noted above. It is also unclear whether the authors submitted the draft of the report for peer review or the Energy Institute plans to submit the report for peer review upon completion.

Orbach may have been referring to the role played by the Environmental Defense Fund (EDF) in shaping the report’s methodology and reviewing drafts.³¹ EDF’s Scott Anderson also reviewed the report issued

²⁷ *Id.* at Part 4, p. 8.

²⁸ *Id.* at Part 4, p. 66.

²⁹ *Id.* at Part 4, p. 69.

³⁰ *Id.* at Part 4, p. 6.

by the University at Buffalo (UB) Shale Resources and Society Institute in May 2012. UB initially claimed that that report was “peer-reviewed,” but later retracted that claim, saying that this “This description may have given readers an incorrect impression.”³² Anderson wrote in a blog post that while he did review the UB study, “several of the opinions and conclusions in the report are questionable.”³³

³¹ Scott Anderson, “If the Problem Isn’t Fracking, Then What Is?,” EDF Energy Exchange, February 16, 2012. Accessed at: <http://blogs.edf.org/energyexchange/2012/02/16/if-the-problem-isnt-hydraulic-fracturing-then-what-is/>

³² “UB’s Shale Resources and Society Institute Examines Violations in Developing Natural Gas in Pennsylvania’s Marcellus Shale,” University at Buffalo, May 15, 2012. Accessed at: <http://www.buffalo.edu/news/13434>

³³ Scott Anderson, “University at Buffalo’s Shale Resources And Society Institute’s ‘Environmental Impacts During Shale Gas Drilling’ Report,” EDF Energy Exchange, May 16, 2012. Accessed at: <http://blogs.edf.org/energyexchange/2012/05/16/university-at-buffalos-shale-resources-and-society-institute%E2%80%99s-%E2%80%98environmental-impacts-during-shale-gas-drilling%E2%80%99-report/>

“The study was performed by the University of Texas’ Energy Institute and was completely funded by the university ‘so it was not dependent on sources either from the energy community or the environmental community,’ Groat said.”

– Charles “Chip” Groat, report lead investigator and PXP board member, quoted in Inside Science News Service, February 20, 2012

II. Lead Investigator’s Major Conflict of Interest

The principal investigator for the UT Energy Institute report, Charles “Chip” Groat, has a substantial, undisclosed conflict of interest: he sits on the board of, and has a major financial stake in, an oil and gas company involved in hydraulic fracturing. This was not disclosed in the report or accompanying materials and presentations. In fact, the university and Groat himself stressed that the report was independent of industry, perhaps in order to enhance the appearance of credibility. Proper disclosure of Groat’s stake in the oil and gas industry would have raised questions about the report’s credibility and independence.

The Energy Institute report’s industry-friendly spin and message are even more troubling – if predictable – in light of this undisclosed conflict of interest.

Groat’s Directorship and Financial Stake in Plains Exploration and Production

Groat serves as a director of an oil and gas company engaged in fracking, Plains Exploration and Production (PXP), and also has a significant financial stake in the company. The directorship and financial stake are not disclosed anywhere in the UT Energy Institute study, on the Institute’s website, or in the various presentations Groat gave on the study.

Groat joined the board of Pogo Producing, a Houston-based oil and gas driller, in November 2005, just five months after resigning as director of the U.S. Geological Survey (amidst a scandal and Congressional investigation, described below).³⁴ When Pogo was acquired in 2007 by Plains Exploration & Production (PXP), Groat became a director there, and has remained on the PXP board since.

Since 2007, Groat has received over \$1.5 million in cash and stock compensation from PXP (an average of \$380,000 per year).³⁵ As a result, the value of Groat’s current stake in the company is \$1.62 million (based on PXP’s closing stock price on July 20, 2012, \$40.34). This level of compensation dwarfs the \$173,000 salary Groat earns from the University of Texas as of 2012.³⁶

³⁴ “Dr. Charles G. Groat Joins Pogo Producing Company”, *PRNewswire*, November 1, 2005. Accessed at: <http://www2.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/11-01-2005/0004205149&EDATE=>

³⁵ Definitive Proxy Statements (DEF 14A) for Plains Exploration & Production (PXP), FYs 2007-2011, SEC EDGAR online database. Accessed at: <http://www.sec.gov/cgi-bin/browse-edgar?action=getcompany&CIK=0000891456&type=DEF+14A&dateb=&owner=exclude&count=40>

³⁶ “Charles G. Groat”, Government Employee Salaries Database, *The Texas Tribune*. Accessed at: <http://www.texastribune.org/library/data/government-employee-salaries/the-university-of-texas-at-austin/charles-g-groat/253140/>

Chip Groat's Compensation from POGO/PXP, 2006-2011

<u>Year</u>	<u>PXP/Pogo cash award</u>	<u>PXP/Pogo stock award</u>	<u>Total PXP/Pogo compensation</u>
2006	\$164,470	\$39,358	\$203,828
2007	8,326	0	8,326
2008	54,500	439,098	493,598
2009	58,500	249,800	308,300
2010	59,000	247,700	308,529*
2011	58,500	355,400	413,900

Value of PXP Stockholdings as of 7/20/2012: \$1.62 million (40,138 shares at \$40.34)
 2011 PXP Compensation: \$413,900
 2012 UT Salary: \$173,273

* includes \$1,829 for use of corporate aircraft

In the annual report to its shareholders filed with the SEC in 2012, PXP makes it clear that the value of its stock (and thus Groat's compensation) is in part dependent on government regulation of hydrofracking and the company's exposure to liability for environmental damages:

Environmental liabilities could adversely affect our financial condition. The oil and gas business is subject to environmental hazards, such as oil spills, gas leaks and ruptures and discharges of petroleum products and hazardous substances and historical disposal activities. These environmental hazards could expose us to material liabilities for property damages, personal injuries or other environmental harm, including costs of investigating and remediating contaminated properties. ... ***Legislation and regulatory initiatives relating to hydraulic fracturing could increase our cost of doing business and adversely affect our operations.*** ... [T]he imposition of stringent new regulatory and permitting requirements related to the practice of hydraulic fracturing could significantly increase our cost of doing business and adversely affect our operations.³⁷

Despite its obvious bearing on the Energy Institute's study's legitimacy, Groat's significant financial interest in a hydrofracking company is not mentioned in any of the biographical material accompanying the Energy Institute study, or even included alongside the 23 "selected boards and committees" listed in

³⁷ 2011 SEC Form 10-K (Annual Report), Plains Exploration & Production Company, February 24, 2012. Accessed at: <http://phx.corporate-ir.net/phoenix.zhtml?c=132091&p=irol-SECText&TEXT=aHR0cDovL2lyLmludC53ZXN0bGF3YnVzaW5lc3MuY29tL2RvY3VtZW50L3YxLzAwMDEwOTMxMjUtMTItMDEwOTI0L3htbA%3d%3d/>.

the three-page CV available from his University of Texas bio.³⁸ This conflict of interest has also been absent from all U.S. news coverage of the study's results.³⁹

B.1 Principal Investigator and Co-Investigator

Charles G. Groat, PhD, Associate Director, Energy Institute

Dr. Groat's interests focus on advancing the role of science and engineering in shaping policy and informing decisions. He is Director of the Center for International Energy and Environmental Policy (CIEEP) at the Jackson School of Geosciences. CIEEP is chartered as a dedicated policy center in one of the University's longstanding areas of leadership – energy development and its confluence with the environment. Prior to these positions, Dr. Groat served for 6½ years as Director of the U.S. Geological Survey, having been appointed by President Clinton and retained by President Bush. He has been a member of the National Research Council Board on Earth Sciences and Resources and the Outer Continental Shelf Policy Board. He is a past President of the Association of American State Geologists and of the Energy Minerals Division of American Association of Petroleum Geologists. His degrees are in geology from the University of Rochester (AB), University of Massachusetts (MS), and The University of Texas at Austin (PhD).



The bio of Groat included in the UT Energy Institute report (Appendix B, page 76). There is no mention of PXP.

PXP's Stake in the Fracking Debate

PXP has a major stake in hydrofracking operations in the southeastern U.S.'s Haynesville Shale region, via a joint venture with larger competitor Chesapeake Energy. The Haynesville Shale was one of three shale plays studied in the Energy Institute report, along with the Barnett Shale and the Marcellus Shale.

The company also holds extensive mineral leases on land in Wyoming's Bridger-Teton National Forest, which it acquired prior to a 2009 law protecting public land in that region from drilling. Since its leases were grandfathered in under the 2009 law, PXP is provisionally allowed to drill in Bridger-Teton, and it submitted a proposal for 137 horizontally-drilled natural gas wells to the U.S. Forest Service in 2011. A year later, that plan remains delayed pending a Forest Service environmental impact study, after the EPA expressed concern about various aspects of the PXP plan, including the depth of groundwater-protecting well casings and the company's willingness to disclose the chemical composition of its fracking fluid.⁴⁰

PXP is also notable for its ongoing efforts to extract oil and gas from the Inglewood Oil Field in southern Los Angeles, where the environmental and health impacts of its operations will be magnified by extreme population density: 300,000 people live within three miles of the drilling site. The company has been involved in litigation with local residents and environmental groups over air pollution for years, and recently agreed to conduct "the first study to look at the impact of fracking in California, including its impact on groundwater. ... Under terms of the settlement, PXP and the Los Angeles County Department of Regional Planning, which oversees the oil field, can jointly select an independent peer-reviewer to review the findings."⁴¹ The study is expected to be published in August 2012, though even after agreeing

³⁸ "Charles G. Groat", Researcher Profile, Jackson School of Geosciences, University of Texas at Austin. Accessed at: http://www.jsg.utexas.edu/researcher/charles_groat (This omission may be due to the c.v. being out of date).

³⁹ *The Guardian* did make note of the connection. See Patrick Barkham, "What's the truth about fracking?", *The Guardian* (UK), April 17, 2012. Accessed at: <http://www.guardian.co.uk/environment/2012/apr/17/whats-the-truth-about-fracking>

⁴⁰ "EPA: Groundwater concerns about Hoback gas wells", *Associated Press*, March 17, 2011. Accessed at: <http://www.businessweek.com/ap/financialnews/D9M10IMO0.htm>

⁴¹ Ngoc Nguyen, "Fracking Impact on Water Worries Californians", *New America Media/InsideClimate News*, April 12, 2012. Accessed at: <http://newamericamedia.org/2012/04/fracking-and-pollution.php>

to these terms, PXP went ahead with fracking operations in the Inglewood play, fracking two wells with a combined 293,000 gallons of frack fluid between November 2011 and January 2012.⁴²

Meanwhile, the Los Angeles County Attorney filed eight misdemeanor charges against PXP in 2011, alleging that it failed to report a 2010 oil spill that contaminated the Rio Hondo River. These charges are still being pursued in court⁴³ and a 2011 spill into the same waterway remains under investigation.⁴⁴

USGS Research Scandal and Resignation

Groat is no stranger to research controversies. In 2005, he abruptly resigned his post as director of the U.S. Geological Survey after it was revealed that scientific data about the environmental risks of a USGS project had been falsified or altered to yield desired results.

When Groat was appointed head of the USGS by President Clinton in 1998, one of the agency's major initiatives was evaluating the suitability of Yucca Mountain, in southwestern Nevada, as the potential site of a repository for spent nuclear fuel and other radioactive waste. Of particular concern was the possibility of water infiltrating the facility, which would corrode waste storage containers and allow newly contaminated water to trickle back into groundwater aquifers beneath the mountain.⁴⁵

Between 1998 and 2000, three USGS scientists working on water infiltration projects for the proposed Yucca Mountain facility exchanged emails revealing that they had altered or outright falsified the results of their research to produce desired outcomes. One of the scientists, Joseph Hevesi – who would later have to be subpoenaed to appear before a House of Representatives subcommittee after refusing to cooperate with their investigation – was particularly explicit:

“[T]he Yucca Mountain Project has now reached a point where they need to have certain items work, no matter what. The infiltration maps are on that list. If the USGS can't find a way to make it work, Sandia [*a Lockheed Martin-owned research firm contracted by the Department of Energy to work at the future repository*] will. But for now they are definitely counting on us to do the job.” (December 17, 1998)

“I am thinking that if I want to remain a viable player on the Yucca Mountain Project, which may translate to continued funding, I need to show that we can get the job done and provide the modelers with the results that they need.” (April 23, 1999)

“In the end I keep track of two sets of files: The ones that will keep Quality Assurance happy and the ones that were actually used.” (November 15, 1999)⁴⁶

⁴² Leiloni De Gruy, “Culver residents prepare to receive update on fracking activity in nearby oil field,” *Los Angeles Wave*, June 12, 2012. Accessed at: http://wavenewspapers.com/news/local/culver_city_edition/article_be94e022-b4d0-11e1-905c-001a4bcf6878.html

⁴³ “DA Files Water Pollution Case Against PXP”, *Eastern Group News*, August 19, 2011. Accessed at: <http://egpnews.com/2011/08/da-files-water-pollution-case-against-pxp/>

⁴⁴ Elizabeth Hsing-Huei Chou, “Past PXP Spill Went Unreported for Weeks, Also Being Investigated”, *Eastern Group News*, May 5, 2011. Accessed at: <http://egpnews.com/2011/05/past-pxp-spill-went-unreported-for-weeks-being-investigated/>

⁴⁵ Suzanne Struglinski, “Scientist continued work despite probe”, *Las Vegas Sun*, April 12, 2005. Accessed at: <http://www.lasvegassun.com/news/2005/apr/12/scientist-continued-work-despite-probe/>

⁴⁶ “Yucca Mountain Project: Digging for the Truth?”, Hearing Before the Subcommittee on the Federal Workforce and Agency Organization of the Committee on Government Reform, H.R. 109 (1), Serial No. 109-89, June 29, 2005. Accessed at: <http://www.gpo.gov/fdsys/pkg/CHRG-109hrg24819/html/CHRG-109hrg24819.htm>

While it's unclear when Groat first learned of these emails and the scientific misconduct they allude to, he came under fire from Congress almost immediately for allowing Hevesi and his correspondents, Alan and Lorraine Flint, to continue working on the Yucca Mountain project after the emails had been disclosed and the investigation launched, even after initially testifying to the House subcommittee that they had been pulled off the job.⁴⁷ The subcommittee's chair, Rep. Jon Porter of Nevada, questioned Groat's commitment to the investigation given his "cavalier attitude" to the scientists' continued work at USGS.⁴⁸

Furthermore, documents that came to light after the email investigation had concluded show that Groat ignored warning signs about the scientific merits of Hevesi's and the Flints' work, allowing a study they authored together in 2000 to "skirt the review process" and be published with the USGS imprimatur despite having been rejected by an independent reviewer for "technical problems with 'model calibration, drainage estimates, (and) water storage'."⁴⁹

Interestingly, another federal official who came in for harsh criticism by Porter and his colleagues during these hearings was Samuel Bodman, then U.S. Secretary of Energy and currently on the Energy Institute's board of directors. Bodman's agency was collaborating with the USGS on plans for the Yucca facility, and he and Groat announced the discovery of the falsification emails jointly. After the House investigation had concluded, Sen. John Ensign of Nevada assigned blame to both agencies: "[T]he underlying fact [is] that the science presented by the USGS and the DOE is faulty, misguided and fraudulent. The emails in question show clearly that data has been manipulated or fabricated."⁵⁰

In June 2005, only three months after the emails had been revealed, and while the investigation into their contents continued, Groat resigned as head of the USGS and accepted an offer from the University of Texas at Austin, denying any link between the scandal and his resignation through a spokesperson.⁵¹

⁴⁷ Samantha Young, "Scientist in e-mail flap returned to Yucca project", *Las Vegas Review-Journal*, April 12, 2005. Accessed at: http://www.reviewjournal.com/lvrj_home/2005/Apr-12-Tue-2005/news/26271464.html

⁴⁸ "Yucca Mountain Project: Have Federal Employees Falsified Documents?", Hearing Before the Subcommittee on the Federal Workforce and Agency Organization of the Committee on Government Reform, H.R. 109 (1), Serial No. 109-60, April 5, 2005. Accessed at: <http://www.gpo.gov/fdsys/pkg/CHRG-109hrg23207/html/CHRG-109hrg23207.htm>

⁴⁹ Keith Rogers, "Yucca Mountain planners reorganizing", *Las Vegas Review-Journal*, January 13, 2006. Accessed at: http://www.reviewjournal.com/lvrj_home/2006/Jan-13-Fri-2006/news/5337709.html

⁵⁰ "No Criminal Charges in Yucca Mountain Email Science Scandal", *Environmental News Service*, April 28, 2006. Accessed at: <http://www.ens-newswire.com/ens/apr2006/2006-04-28-03.asp>

⁵¹ Suzanne Struglinski, "U.S. Geological Survey chief Groat resigns", *Las Vegas Sun*, June 10, 2005. Accessed at: <http://www.lasvegassun.com/news/2005/jun/10/us-geological-survey-chief-groat-resigns/>

“Our approach is positive, not punitive. We are committed to economically viable procedures for addressing the environmental issues associated with energy sources.”

– Energy Institute director Ray Orbach in his pitch to Laredo Petroleum CEO Randy Foutch to join the Energy Institute advisory board, 12/7/2009

III. Other Industry Ties

The Energy Institute has extensive industry ties, in addition to Groat’s directorship at Plains Exploration. 13 of the Institute’s 16-member advisory council have strong ties to the oil and gas industry.⁵² The report’s industry-friendly message is not surprising in light of these connections to individuals positioned to profit substantially from fracking.

Ties to the Oil & Gas Industry

- **Jack Randall**, the advisory council chair, was a director of XTO Energy until its 2009 acquisition by ExxonMobil; is co-founder of Caymus Energy Fund, a hedge fund focused on the domestic energy industry; and is co-founder of Randall & Dewey, the oil and gas transactions advisory business of the Jeffries Group, the investment bank that secured billions in investment in Chesapeake Energy, loaning \$3 billion to the troubled company this year. Jeffries’ vice chair, Ralph Eads, is a former fraternity brother of Chesapeake CEO Aubrey McClendon, is also a partner in a French vineyard with him, and sits together with him on the board of gas advocacy group American Clear Skies Foundation.⁵³
- **Samuel Bodman**, former advisory council chair, sits on the board of Hess Corporation and AES, an oil and gas and an electric power company, respectively. Hess’s 10-K filing with the SEC makes it clear that increased regulation of hydraulic fracturing would affect the company adversely:

Our oil and gas operations, like those of the industry, are subject to environmental risks such as oil spills, produced water spills, gas leaks and ruptures and discharges of substances or gases that could expose us to substantial liability for pollution or other environmental damage.⁵⁴

Bodman is also a former Secretary of the U.S. Department of Energy under George W. Bush.⁵⁵

- **Donald Evans** is the chairman of Energy Future Holdings, which owns three power companies in Texas and is a senior partner in Quintana Energy Partners, an energy investment fund focused on oil and natural gas, coal, power, and oilfield services. Evans is ex-president of gas and oil

⁵² See generally Advisory Council, The Energy Institute at The University of Texas at Austin. Accessed at: http://energy.utexas.edu/index.php?option=com_content&view=article&id=96&Itemid=166

⁵³ “Zachary R. Mider, Chesapeake Turns To Jefferies’ Eads in \$28 Billion Deals: Energy”, Bloomberg, May 18, 2012. Accessed at: <http://www.bloomberg.com/news/2012-05-17/chesapeake-turns-to-jefferies-eads-in-28-billion-deals-energy.html>

⁵⁴ 2011 SEC Form 10-K (Annual Report), Hess Corporation, February 27, 2012. Accessed at: <http://www.sec.gov/Archives/edgar/data/4447/000119312512081827/d270298d10k.htm>

⁵⁵ “Samuel W. Bodman III: Executive Profile & Biography”, Bloomberg Businessweek. Accessed at: <http://investing.businessweek.com/research/stocks/people/person.asp?personId=640749&ticker=WFT:US&previousCapiD=249841&previousTitle=HESS%20CORP>

company Tom Brown, which has since been acquired by Encana, one of North America's largest natural gas producers and owner of the Pavillion, Wyoming gas field – where the EPA found evidence of groundwater contamination from fracking.⁵⁶⁵⁷ Denying responsibility for the contamination, Encana is supplying drinking water to Pavillion residents.⁵⁸ Evans is also a former Secretary of the U.S. Department of Commerce under George W. Bush.⁵⁹

- **Ernest H. Cockrell** is the Chairman of Cockrell Interests Inc., “a group of philanthropic and investment companies built on the success of The Cockrell Oil Company.”⁶⁰ His father, Ernest Cockrell, Jr., was president of Production Maintenance Company and Oil Production Maintenance, Inc., Texas Production Company, and a director of Pennzoil.⁶¹
- **Linda Cook** is former CEO of Shell Gas & Power.⁶² She also currently sits on the boards of Marathon Oil Company as well as KBR, the former Halliburton subsidiary that has drawn controversy for its lucrative Iraq reconstruction contracts and guilty plea to violating the Foreign Corrupt Practices Act.⁶³⁶⁴
- **David Crane** is President, CEO, and a board member of NRG Energy, the New Jersey electric power company that operates gas, oil, coal, and nuclear plants in addition to wind and solar farms.⁶⁵
- **Henry Groppe**, the advisory council vice chair, is a founding partner of Groppe, Long & Littell, an energy industry consultancy that “provides a basis for informed business decisions in matters than involve the economics of the oil and gas industries.”⁶⁶
- **Robert W. Fri** was on the board of the National Petroleum Council for 17 years, formerly served as Deputy Administrator of the Environmental Protection Agency, and is now a visiting scholar at Resources for the Future, an energy policy non-profit.⁶⁷

⁵⁶ “Donald L. Evans: Executive Profile & Biography”, Bloomberg Businessweek. Accessed at: <http://investing.businessweek.com/research/stocks/private/person.asp?personId=256246&privcapId=29932337&previousCapId=21401&previousTitle=KKR%20%20CO%20LP>

⁵⁷ “EPA Releases Draft Findings of Pavillion, Wyoming Ground Water Investigation for Public Comment and Independent Scientific Review”, Environmental Protection Administration, December 8, 2011. Accessed at: <http://yosemite.epa.gov/opa/admpress.nsf/20ed1dfa1751192c8525735900400c30/ef35bd26a80d6ce3852579600065c94e!OpenDocument>

⁵⁸ Mark Wilcox and Business Report Staff, “Encana touts envt'l responsibility while Pavillion debate rages”, Wyoming Business Report, June 13, 2012. Accessed at: <http://www.wyomingbusinessreport.com/article.asp?id=63348>

⁵⁹ “Donald L. Evans: Executive Profile & Biography”, Bloomberg Businessweek.

⁶⁰ “eSiteful Case Study: Cockrell Interests”, eSiteful. Accessed at:

<http://www.esiteful.com/work/case.study/financial.and.real.estate/cockrell.interests.aspx>

⁶¹ “Alumni Spotlight: Ernest Cockrell, Jr., BSPE '36, MSPE '36”, University of Texas at Austin. Accessed at:

<http://www.utpgealways1.org/alumni-spotlight/72-ernest-cockrell-jr-bspe-1936-mspe-1936>

⁶² “Linda Cook: Executive Profile & Biography”, Bloomberg Businessweek. Accessed at:

<http://investing.businessweek.com/research/stocks/people/person.asp?personId=9048373&ticker=RDSA:LN>

⁶³ *Id.*

⁶⁴ “SEC Charges KBR and Halliburton for FCPA Violations”, Securities and Exchange Commission, February 11, 2009. Accessed at: <http://www.sec.gov/news/press/2009/2009-23.htm>

⁶⁵ “NRG Generation Assets”, NRG Energy. Accessed at: <http://www.nrgenergy.com/about/assets.html>

⁶⁶ “Welcome to Groppe, Long & Littell”, Groppe, Long & Littell. Accessed at: <http://www.groppealong.com/index.html>

⁶⁷ Curriculum Vitae, Robert W. Fri, Resources for the Future. Accessed at:

http://www.rff.org/Documents/CV/RFF_CV_Fri.pdf

- **Ronald Hulme** is the CEO of Carlson Capital, a hedge fund whose top equity holding is the fracking company El Paso Corp.⁶⁸
- **James Mulva** is the Chairman and CEO of ConocoPhillips, a fracking company sued in early 2012 with allegations of groundwater contamination from the spill of fracking fluids.⁶⁹
- **Shahid Ullah** is COO of Afren, an oil and natural gas exploration and production company based in London.⁷⁰
- **Randy Foutch** is CEO of Laredo Petroleum, an energy company that lost an employee in February in a Texas oil fracking explosion.⁷¹
- **Kenneth Dickerson** is a former government relations executive at ARCO, a subsidiary of BP.⁷²

In pitching Foutch to serve on the Energy Institute's advisory council, director Ray Orbach wrote: "Our approach is positive, not punitive. We are committed to economically viable procedures for addressing the environmental issues associated with energy sources."⁷³

Two of the non-industry advisory council members, Fred Krupp and Deborah Wince-Smith, are presidents of non-profits, Environmental Defense Fund and Council on Competitiveness respectively, that have endorsed shale gas as "bridge fuel" to alternative energy sources in the future.⁷⁴ The last advisory board member, Bernard Bigot, is the chairman and CEO of the Alternative Energies and Atomic Energy Commission of France.

Future Plans & Industry Contributions

The Energy Institute plans to do more on fracking. Their February 2012 study is the first in a series of initiatives to "ensure responsible development of shale gas."⁷⁵ The report was funded entirely by the University of Texas, and "so it was not dependent on sources either from the energy community or the environmental community," according to Chip Groat, the Institute's associate director and leader of the study.⁷⁶ Groat noted that several large energy companies give money to UT for "student support" and

⁶⁸ "Carlson Capital: HedgeTracker", HedgeTracker. Accessed at: <http://www.hedgetracker.com/fund/Carlson-Capital>

⁶⁹ Elaine P. McPherson, "Lawsuit filed against Conoco Phillips for H2O Contamination", The Panola Watchman, January 20, 2012. Accessed at: http://www.news-journal.com/panola/news/lawsuit-filed-against-conoco-phillips-for-h-o-contamination/article_358aaa07-af20-5301-baf0-3ded6e6097e6.html

⁷⁰ "Shahid Ullah: Executive Profile & Biography", Bloomberg Businessweek. Accessed at: <http://investing.businessweek.com/research/stocks/people/person.asp?personId=46511031&ticker=AFR:LN>

⁷¹ "Oilfield explosion leads to man's death", Thomas Jenkins, Big Spring Herald, February 8, 2012. Accessed at: <http://www.bigspringherald.com/content/oilfield-explosion-leads-mans-death>

⁷² "UteachEngineering Advisory Board," UteachEngineering. Accessed at: <http://www.uteachengineering.org/about/advisoryboard.cfm>

⁷³ Raymond Orbach, Letter to Randy A. Foutch, The Energy Institute at The University of Texas at Austin, December 7, 2009, 2. Accessed at: <http://energy.utexas.edu/presentations/files/Randy%20A.%20Foutch.doc>

⁷⁴ See "How to Extract Gas Responsibly", Joe Nocera, The New York Times, February 27, 2012. Accessed at: <http://www.nytimes.com/2012/02/28/opinion/nocera-how-to-frack-responsibly.html> and Drive: Private Sector Demands for Sustainable Energy Solutions, Council on Competitiveness, September 2009, 9. Accessed at: http://www.compete.org/images/uploads/File/PDF%20Files/DRIVE._Private_Sector_Demand_for_Sustainable_Energy_Solutions,_Sept09_.pdf

⁷⁵ Fact-Based Regulation for Environmental Protection in Shale Gas Development, Charles G. Groat and Thomas W. Grimshaw, February 15, 2012, at 3.

⁷⁶ "Fracking's effects on groundwater may be overblown, study shows", Joel N. Shurkin, Inside Science News Service, February 20, 2012. Accessed at: <http://www.foxnews.com/scitech/2012/02/20/frackings-effects-on-groundwater-may-be-overblown-study-shows/>

research, but that money did not go directly to supporting the study.⁷⁷ Groat has his own conflict of interest discussed in more detail above – he sits on the board of Plains Exploration & Production Co., a company active in the Haynesville shale play.⁷⁸

However, the Energy Institute plans to fund the next phase of its shale gas research, an examination of claims on contamination to local and regional water sources, with money from “a consortium of stakeholders, led by companies involved with production of natural gas from hydraulic fracturing of shale,” according to their website.⁷⁹

One company, advisory board member James Mulva’s ConocoPhillips, recently donated \$1.5 million to the school, to be administered by the Energy Institute to support a case study of the Barnett Shale.⁸⁰ As noted above, ConocoPhillips was sued in January for gross negligence for drilling practices at Texas fracking operations that contaminated drinking water supplies.

Oil and gas businesses appear to be making a new push to fund shale and fracking research at universities. Penn State, UT Austin, and the Colorado School of Mines recently received \$2 million from GE and ExxonMobil for a “Shale Gas Regulators Training Program”.⁸¹

The CEOs of both Exxon and GE (Rex Tillerson and Jeff Immelt) had been recruited to serve on the Energy Institute’s advisory council, according to a document with notes on “advisory council nominees” found in the Institute’s website.⁸²

⁷⁷ Alan Boyle, “It’s not fracking’s fault, study says”, MSNBC Cosmic Log, February 16, 2012. Accessed at: http://cosmiclog.msnbc.msn.com/_news/2012/02/16/10426765-its-not-frackings-fault-study-says?lite

⁷⁸ Executive Management & Board of Directors, Plains Exploration & Production. Accessed at: <http://www.pxp.com/about/management.htm>

⁷⁹ “Environmental Consequences of Fossil Fuel Exploration”, The Energy Institute at the University of Texas at Austin, July 28, 2011. Accessed at: http://energy.utexas.edu/index.php?option=com_content&view=article&id=50&Itemid=160

⁸⁰ “ConocoPhillips Gives \$1.5 Million to Fund Cutting-Edge Energy Research”, University of Texas at Austin. Accessed at: <http://giving.utexas.edu/2010/11/01/conocophillips-energy-research/>

⁸¹ Donald Gilliland, “Gas drilling industry paying Penn State to train those who regulate the gas drilling industry”, The Patriot-News, March 8, 2012. Accessed at: http://www.pennlive.com/midstate/index.ssf/2012/03/gas_drilling_industry_paying_p.html

⁸² Energy Institute Advisory Committee Nominees and Status, The Energy Institute at The University of Texas at Austin, December 11, 2009. Accessed at: <http://blog.littlesis.org/wp-content/uploads/2012/03/Advisory-Nominees-12-11-09.doc>