



February 28, 2014

**Testimony of Connecticut Petroleum Council in Opposition to SB-237
Ban on Storage or Disposal of Hydraulic Fracturing Waste**

We express strong opposition to SB-237 which bans the storage and disposal of oil and gas wastes in Connecticut. Current DEEP rules already bar such disposal in Connecticut, so additional legislation is not necessary. A ban on storage means that fracking waste water could not be treated or recycled here, since it would first need to be at least temporarily stored here. We also oppose an overall ban/moratorium of any sort on hydraulic fracturing (HF). As you know, no hydraulic fracturing takes place in Connecticut because our state does not have oil and gas resources, unlike New York, Pennsylvania and Ohio.

The Connecticut Petroleum Council represents a wide range of companies heavily involved in hydraulic fracturing and related activities. Over 60% of the natural gas sold in the U.S. is produced via hydraulic fracturing, and that has greatly reduced the price of natural gas, and to a lesser extent, oil: In July 2008, natural gas hit a record high of \$13.58 per MMBTU's; prices this week were about \$5.50 per million BTU's, an enormous reduction directly attributable to the huge supply of hydraulically fractured natural gas. Those low prices benefit homeowners, municipalities, manufacturers and the state itself, not just for heating purposes, but because they also help reduce electricity costs (over 40% of the state's electricity is generated by natural gas). Oil produced in the U.S (much of it hydraulically fractured) continues to cost less (\$102 per barrel) than non-hydraulically fractured imported Brent crude (\$110 per barrel), thereby helping reduce the cost of gasoline and heating oil.

Increased use of natural gas encouraged by the state's newly passed Comprehensive Energy Strategy (CES) is environmentally beneficial. It will reduce sulfur, PM and mercury emissions, and reduce greenhouse gas emissions by 30% compared to oil and 45% compared to coal. It will also reduce imports of foreign fuel, as natural gas continues to displace oil in homes and manufacturing facilities, and coal and oil in electric generating units.

Reasons for Objections

CT DEEP regulations governing the underground injection well program already ban Class II Underground Injection Wells, which means that no oil or natural gas production waste products can be buried underground in Connecticut under any circumstances. (See: Sec. 22a-430-8). That rule, adopted in 1984, bans any type of underground injection well in the Class I, II, III or IV category. Fears of oil and gas wastes being "buried" here are unfounded.

Companies may want to enter the business of treating or recycling hydraulic fracturing waste or waste water in Connecticut if and when high-volume fracturing (HVHF) begins in New York, thereby opening a new line of business and potentially bringing jobs here. This bill prohibits that (because wastes cannot be “stored” here, which they would have to be before being treated), notwithstanding the governor’s effort to bring new businesses to Connecticut. New waste treatment technologies are emerging frequently: (See Attachment #1 on emerging water treatment technologies, and Attachment #2 on new environmental approaches to HF).

Ban bills such as this one are a back-door attempt to ban the hydraulic fracturing process itself. Similar bills in other Northeast states have been urged by those who want no natural gas exploration or production whatsoever. If those bills were all adopted, there would be nowhere to treat HF waste, which means natural gas from the Marcellus Shale would be forever locked-in, unable to be produced, sold or consumed. (See Attachment #3, for an explanation of how HF works).

Conclusion

Natural gas and oil derived from shale are true game-changers---anchoring the energy revolution taking place in America today. President Obama said in his 2012 State-of-the-Union address that the U.S. had nearly a one-hundred year supply of natural gas, and that the country needs an all-out, all-of-the-above energy strategy that develops every available source of American energy. In 2013, in his State-of-the-Union speech, the President said that the natural gas boom has led to cleaner power and greater energy independence, and that his Administration will keep cutting red tape and speeding up new oil and gas permits. In 2014, the President said the all-of-the-above energy plan he announced in 2012 is working; it’s not just the oil and natural gas production that’s booming; that America is closer to energy independence than we’ve been in decades, and that one of the reasons why is natural gas.

Shale gas currently is being produced in Pennsylvania, West Virginia and Ohio, and oil from shale in North Dakota is now making its way into the Northeast. Hydraulic fracturing has made the U.S. the world’s #1 natural gas producer. These “shale plays” are putting downward pressure on natural gas prices nationwide, lowering our greenhouse gas emissions, improving our energy security by making us less reliant on foreign fuel, and reducing our trade deficit. The industry is adding many jobs---high paying jobs---which in turn improve the standard of living for many in the U.S., increase tax revenues to government and boost the economy.

Let’s not pass legislation that impedes this progress. Thank you for taking our testimony.

Water Treatment Technologies



1. Chemicals



2. Ozone Oxidation

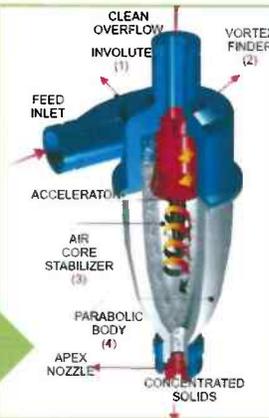


5. Deionization



3. Nano-filtration

4. Hydrocyclones



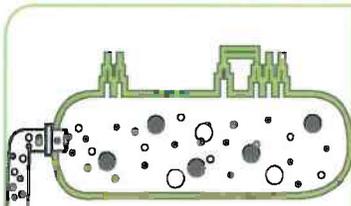
6. UV MVR Evaporator, RO, EC...and many more

Sources: <http://www.apachecorp.com/index.aspx>

The development of advanced hydraulic fracturing and horizontal drilling technologies has been accompanied by safe and responsible water management strategies, including the reuse of fluids produced during the fracturing phase of well development. According to the Penn State Marcellus Center for Outreach and Research, during the first half of 2013 in the Marcellus

shale play, 90 percent of the more than 14 million barrels of produced fluids from fracturing was reused. That represents a significant savings in the amount of new water needed for hydraulic fracturing elsewhere. It illustrates industry's focus on environmental issues and efforts to reduce energy development's impacts on resources and communities.

Innovations Promote Safe & Environmentally Friendly



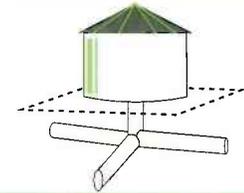
"PITLESS" DRILLING

Use of aboveground tanks for managing well fluids so that there is limited danger of well fluids getting into groundwater



SOUND CONTROL

Sound control and surface management allows for safe drilling in close proximity to people



WATER SYSTEMS

Centralized water management systems that remove trucks from roads



DRILLING SYSTEMS

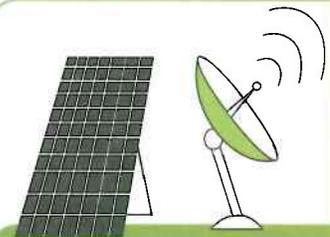
1) Closed loop drilling systems; all drilling fluid stored in steel tanks

2) Whole site liners



"GREEN" FLUIDS

"Green" frac fluids (Example: Environmentally benign components)



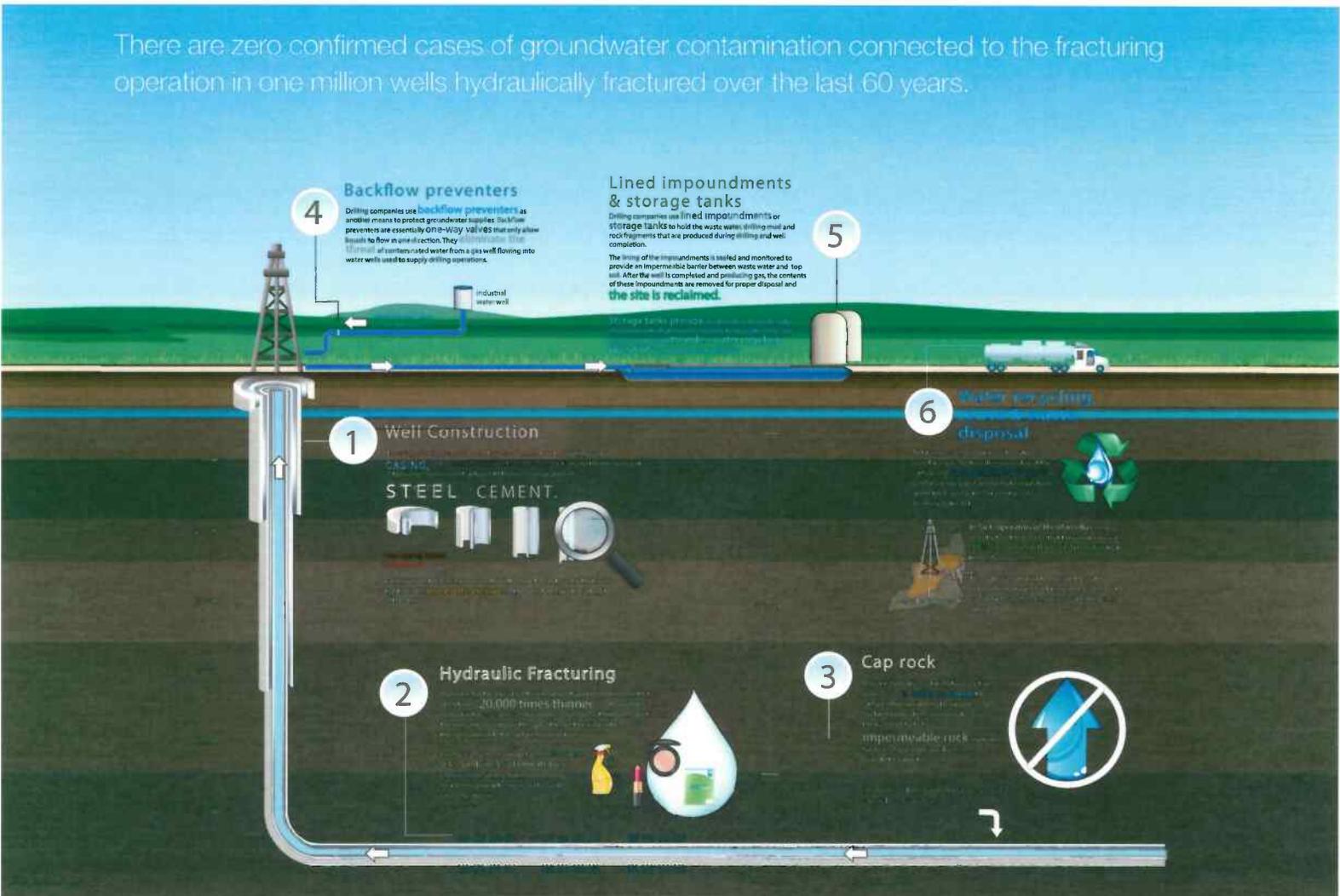
SOLAR PANELS

Photovoltaic solar telemetry to transmit well data from remote locations to central office (reduces use of diesel fuels)

America's shale energy revolution is built on innovation that produced advanced hydraulic fracturing and horizontal drilling technologies and techniques. And that innovation continues, working on ways to make fracking even safer for the surrounding environment. Safe and responsible drilling means site management – from multi-layer surface liners that protect the entire

drilling area to closed-loop systems to maintain control of drilling fluids. Safe operating practices and water management are just two areas for which API has developed standards to protect the environment. The shale energy surge also is spurring innovation: waterless hydraulic fracturing fluid, methods to decontaminate and recycle water used in fracking and more.

There are zero confirmed cases of groundwater contamination connected to the fracturing operation in one million wells hydraulically fractured over the last 60 years.



Developing energy from shale (and other tight-rock formations) using hydraulic fracturing/horizontal drilling takes four to eight weeks – from preparing the site for development to production itself – after which the well can be in production for 20 to 40 years. A well can be a mile or more deep and thousands of feet below groundwater zones before gradually turning horizontal from vertical. The horizontal portion then can stretch more than 6,000 feet. A single well site (or pad) can accommodate a number of wells.

Steel pipe known as surface casing is cemented into place at the uppermost portion of a well to protect the groundwater. As the well is drilled deeper, additional casing is installed to isolate the formation(s) from

which oil or natural gas is to be produced, further protecting groundwater from the producing formations in the well. There have been no confirmed cases of groundwater contamination from hydraulic fracturing itself in 1 million wells fracked over the past 60 years. Numerous protective measures are in place at well sites, including liners under well pads, rubber composite mats under rigs, storage tanks with secondary containment measures, and barriers to control any potential runoff.