

# The FRAC Act: Policy Concerns and Potential Impacts of Congress' Proposed Amendments to the Safe Drinking Water Act

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## I. Introduction

It is an uncontested fact that America runs on energy—energy from fossil fuels in the form of petroleum products, energy from coal and energy from natural gas, among other sources. As America's energy consumption increases<sup>1</sup>, the oil and gas industry has to come up with more creative ways of extracting our natural resources from the Earth.<sup>2</sup> One of these extraction methods is known as hydraulic fracturing, or “fracking.” The process of extracting natural gas has been used for over 60 years<sup>3</sup> and is gaining popularity as a way to extract natural gas from deep beneath the earth's surface.<sup>4</sup> While fracking provides a solution to the energy crisis, it also brings with it new problems that need to be considered before taking action. This paper will discuss the process of fracking and the impact of proposed regulation on the future of fracking.

## II. What is Hydraulic Fracturing?

Hydraulic fracturing, hereafter referred to as “fracking,” is not a new concept. It has been used commercially since the 1940's<sup>5</sup> as a well-stimulation process in the extraction of oil, natural

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<sup>1</sup> See ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2011 WITH PROJECTIONS TO 2035 (2011), available at [http://www.eia.gov/forecasts/aeo/pdf/0383\(2011\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2011).pdf). According to EIA, current total energy consumption is projected to continue to increase through 2035 to between 110 and 120 quadrillion Btu. *Id.* at 20.

<sup>2</sup> Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 FORDHAM ENVTL. LAW REV. 115, 115 (2009).

<sup>3</sup> GROUNDWATER PROTECTION COUNCIL, MODERN SHALE GAS DEVELOPMENT IN THE UNITED STATES: A PRIMER, prepared for the U.S. Department of Energy, National Energy Technology Laboratory (NETL) with ALL Consulting 5 (Oklahoma City, OK, April 2009); Jim Rubin, *Fracking in the Spotlight*, 2011 EMERGING ISSUES 5576 (Lexis 2011).

<sup>4</sup> Kerr, RA *Natural Gas from Shale Bursts onto the Scene*, SCIENCE, June 2010, 1624–1626.

<sup>5</sup> OFFICE OF FOSSIL ENERGY, NATIONAL ENERGY TECH. LAB., U.S. DEP'T OF ENERGY, STATE OIL AND NATURAL GAS REGULATIONS DESIGNED TO PROTECT WATER RESOURCES 23 (2009), available at <http://www.gwpc.org/e-library/documents/general/State%20Oil%20and%20Gas%20Regulations%20Designed%20to%20Protect%20Water%20Resources.pdf>.

gas, geothermal energy and water.<sup>6</sup> The process of fracking utilizes high pressure fluids<sup>7</sup> to open or enlarge fractures found in shale rock, causing the trapped natural gas to be released<sup>8</sup> and allowing the natural gas to move freely to the wellbore for extraction.<sup>9</sup> While the fracking fluid is primarily comprised of water, sand and chemicals<sup>10</sup> are also added for a variety of reasons. Sands are used in order to ensure that the fractures created are kept open, and chemical additives serve as friction reducers and biocides.<sup>11</sup> These fracking fluids are referred to as “flowback” and are often either recycled or discharged into surface water.<sup>12</sup> Fracking, as with any highly industrialized process, has significant environmental impacts, which are quickly becoming a growing area of concern.<sup>13</sup> Chemical contamination of groundwater by fracking fluids<sup>14</sup> and the large amounts of water extracted for fracking—between 2.4 and 4 million gallons per well<sup>15</sup>—are two major sources of concern.

### III. Existing Institutions

Under the Energy Policy Act of 2005, hydraulic fracturing is exempt from the Safe Drinking Water Act (SDWA).<sup>16</sup> That does not mean that the federal government is without regulatory authority; the Environmental Protection Agency (EPA) can regulate flowback

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<sup>6</sup> *Hydraulic Fracturing*, US ENVIRONMENTAL PROTECTION AGENCY, [http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells\\_hydrowhat.cfm](http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydrowhat.cfm) (last visited Oct. 11, 2011).

<sup>7</sup> Abrahm Lustgarten, *Environmental Concerns Surround Chemical Used in Natural Gas Development*, GOV MONITOR (Oct. 5, 2009), [http://www.thegovmonitor.com/world\\_news/united\\_states/environmental-concerns-surround-chemicals-used-in-natural-gas-development-8335.html](http://www.thegovmonitor.com/world_news/united_states/environmental-concerns-surround-chemicals-used-in-natural-gas-development-8335.html).

<sup>8</sup> US ENVIRONMENTAL PROTECTION AGENCY, *supra* note 6.

<sup>9</sup> Rubin, *supra* note 3, at 1.

<sup>10</sup> Zeik Travis, *Hydraulic Fracturing Goes to Court: How Texas Jurisprudence on Subsurface Trespass Will Influence West Virginia Oil and Gas Law*, 112 W. VA. L. REV. 599, 601 (2009).

<sup>11</sup> P. KAUFMAN, G. S. PENNY, AND J. PAKTINAT, SOCIETY OF PETROLEUM ENGINEERS, CRITICAL EVALUATION OF ADDITIVES USED IN SHALE SLICK WATER FRACTURES 2-3 (2008).

<sup>12</sup> US ENVIRONMENTAL PROTECTION AGENCY, *supra* note 6.

<sup>13</sup> Rubin, *supra* note 3, at 2.

<sup>14</sup> Lustgarten, *supra* note 7.

<sup>15</sup> *Id.*

<sup>16</sup> See Energy Policy Act of 2005, 42 USC § 300h(d)(1)(B)(ii) (2006).

disposal through the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) permit program and the injection of fracturing fluids under the SDWA.<sup>17</sup> Under the Clean Water Act's NPDES permit program, water pollution is controlled by regulating point sources that are discharging pollutants.<sup>18</sup> If flowback is discharged into surface waters after fracking is complete, the natural gas company could be considered a point source under the Clean Water Act and would require a NPDES permit prior to disposal.<sup>19</sup> Apart from these two options, hydraulic fracking is currently a state-regulated activity,<sup>20</sup> with quite a few states including Pennsylvania, New York, and Texas implementing their own oil and natural gas regulations.<sup>21</sup>

#### **IV. The FRAC Act**

The Fracturing Responsibility and Awareness of Chemicals Act was introduced jointly in the U.S. Senate and House of Representatives on June 9, 2009 by Colorado Representatives Diana DeGette and Jared Polis.<sup>22</sup> The bill, appropriately dubbed the FRAC Act, aims to “[close] a natural-gas drilling loophole”<sup>23</sup> created by the Energy Policy Act of 2005 by removing the exemption for fracking under the SDWA, a feat that was unsuccessful in prior litigation.<sup>24</sup> These

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<sup>17</sup> *Regulation of Hydraulic Fracturing by the Office of Water*, US ENVIRONMENTAL PROTECTION AGENCY, [http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells\\_hydroreg.cfm#safehyfr](http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroreg.cfm#safehyfr) (last visited Oct. 11, 2011).

<sup>18</sup> US ENVIRONMENTAL PROTECTION AGENCY, *National Pollutant Discharge Elimination System (NPDES)*, <http://cfpub.epa.gov/npdes/> (last visited Oct. 10, 2011).

<sup>19</sup> See National Pollution Discharge Elimination System, 33 USCS § 1342 (1972).

<sup>20</sup> Rubin, *supra* note 3, at 2.

<sup>21</sup> Wes Deweese, *Fracturing Misconceptions: A History of Effective State Regulation, Groundwater Protection, and The Ill-conceived Frac Act*, 6 OKLA. J. L. & TECH. 49, 21-31 (2010).

<sup>22</sup> H.R. 2766, 111<sup>th</sup> Cong. (1<sup>st</sup> Sess. 2009); see also S. 1215, 111<sup>th</sup> Cong. (1<sup>st</sup> Sess. 2009).

<sup>23</sup> David Williams, *DeGette, Polis Introduce FRAC Act Aimed at Closing Hydraulic Fracturing 'Loophole'*, THE COLORADO INDEPENDENT, June 9, 2009, <http://coloradoindependent.com/30784/degette-polis-introduce-frac-act-aimed-at-closing-hydraulic-fracturing-loophole>.

<sup>24</sup> See *Legal Env'tl. Assistance Fund v. EPA*, 276 F.3d 1253 (11<sup>th</sup> Cir. 2001) (holding that the EPA's decision to classify hydraulic fracturing coal beds as a Class II-like “underground injection activity” is inconsistent with the statute but giving EPA broad discretion to regulate.)

sister bills were referred to committee on the same day they were introduced, where they remained until March 2011.<sup>25</sup>

The FRAC Act was reintroduced in both the U.S. Senate and House of Representatives on March 15, 2011 by Representative's DeGette and Polis.<sup>26</sup> Again the bills set out to repeal the exemption for fracking in the SDWA laid out by the Energy Policy Act of 2005, which changed section 300h(d) of the SDWA to read as follows:

The term 'underground injection'—

(A) Means the subsurface emplacement of fluids by well injection; and

(B) Excludes—

(i) The underground injection of natural gas for purposes of storage; and

(ii) The underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operation related to oil, gas, or geothermal activities.<sup>27</sup>

The FRAC Act aims to close this loophole not only by repealing the fracking exemption under the SDWA, but would also require disclosure of the chemical constituents in fracking fluid.<sup>28</sup> In order to do so, the FRAC Act proposes to amend Section 1421(d) of the Safe Drinking Water Act<sup>29</sup> by striking paragraph (1) which excluded hydraulic fracturing fluids, and inserting an inclusion provision. The provision, as proposed states:

“(1) UNDERGROUND INJECTION—

(B) INCLUSION—the term 'underground injection' includes the underground injection of fluids or propping agents pursuant to hydraulic fracturing operations relating to oil or gas production activities.”<sup>30</sup>

The FRAC Act would not only close the loophole created in 2005 exempting fracking from the SDWA, but it would also include a disclosure clause.<sup>31</sup> The clause would require natural gas companies to disclose the chemicals used in their drilling fluids to the state or the

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<sup>25</sup> H.R. 2766, 111<sup>th</sup> Cong. (2009); *see also* S. 1215, 111<sup>th</sup> Cong. (2009).

<sup>26</sup> H.R. 1084, 112<sup>th</sup> Cong. (2011); *see also* S. 587, 112<sup>th</sup> Cong. (2011).

<sup>27</sup> 42 U.S.C. § 300h(d)(1) (2006). *See also* Dewese, *supra* note 21, at 6-7.

<sup>28</sup> H.R. 1084, 112<sup>th</sup> Cong. (2011); *see also* S. 587, 112<sup>th</sup> Cong. (2011).

<sup>29</sup> 42 U.S.C. § 300h(d) (2006).

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

Administrator of the EPA prior to drilling, or the chemical formula when the state determines that that a medical emergency exists.<sup>32</sup> Disclosure in case of an emergency situation would additionally require a written statement of need and a confidentiality agreement not to publicly disclose the chemical formula, since the main concern of natural gas companies is the disclosure of their proprietary chemical formulas.<sup>33</sup> Currently there is no requirement of public disclosure of proprietary information and disclosure of the chemical components is necessary in order for the states or EPA to ensure the safety of the public's health in and around natural gas wells.

## V. The Environmental Debate

As with any controversial issue, hydraulic fracturing, along with the 2005 exemption and the 2009/2011 FRAC Acts, are subjects of vigorous debate. The largest issues in the environmental dialogue surrounding fracking are the potential contamination of groundwater and surface waters and the chemical components of the fracking fluid. Proponents of fracking first point to the fact that in an era of coal and foreign oil, dirty air, and oil spills, fracking affords a 'homegrown,' clean alternative.<sup>34</sup> Secondly, natural gas is abundant and reliable in the U.S. and yields high energy content.<sup>35</sup> Finally, proponents point to the fact that it is efficient and clean-burning by emitting lower levels of carbon dioxide, sulfur dioxide, carbon monoxide, and other pollutants than its coal counterpart.<sup>36</sup> Coupled with the "green energy" argument is the justification offered by many industry representatives that the drilling fluids used are comprised

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<sup>32</sup> *Id.*

<sup>33</sup> *Id.* See also Jon Hurdle, *Pennsylvania regulators issued a notice of violation on Tuesday to Cabot Oil & Gas Corp. for spilling thousands of gallons of a chemical used in natural gas drilling*, REUTERS, Sept. 22, 2009, <http://www.reuters.com/article/2009/09/22/energy-pennsylvania-idAFN2236809420090922>; Deweese, *supra* note 21, at 6-7.

<sup>34</sup> Kerr, *supra* note 5, at 1624.

<sup>35</sup> David Kargbo, Ron Wilhelm, & David Campbell, *Natural Gas Plays in the Marcellus Shale: Challenges and Potential Opportunities*, 44 ENVTL. SCI. & TECH. 15, 5679-84 (2010).

<sup>36</sup> *Id.*

mainly of non-toxic, even edible, substances.<sup>37</sup> Additionally, it is claimed that the toxic chemicals that are used, if any, are in such a small amount that it is less of a concern and, apart from this, wells are usually so far removed from groundwater aquifers that this is not a problem.<sup>38</sup> While decreasing reliance on foreign fuel and moving toward greener, more sustainable options is the way in which the US should be headed, the environmental concerns and public health concerns such as water contamination should not be ignored.

The main concern of opponents is the potential for contamination of drinking water and surface waters due to fluid flow and discharge,<sup>39</sup> and the exemption of fracking from the SDWA. As Representative Maurice Hinchey, one of the drafters of the FRAC Act, points out, the SDWA is in place because “[o]ur legislation says everyone deserves to have safe drinking water . . . .”<sup>40</sup> While there is a general consensus that fracking does not contaminate groundwater<sup>41</sup>, a recent study from Duke University indicates otherwise.<sup>42</sup> The study analyzed groundwater from 68 private water wells in Northeast Pennsylvania and upstate New York,<sup>43</sup> and detected methane in 85% of the wells (51 of the 68 wells), with concentrations substantially higher near natural gas extraction wells.<sup>44</sup> While there is no guarantee that drinking water contamination will occur, the study suggests three possible mechanisms by which methane and other fluids from fracking can

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<sup>37</sup> Abraham Lustgarten, *Buried Secrets: Is Natural Gas Drilling Endangering U.S. Water Supplies?*, PROPUBLICA (Nov. 13, 2008), <http://www.propublica.org/article/buried-secrets-is-natural-gas-drilling-endangering-us-water-supplies-1113>.

<sup>38</sup> *Id.*; see also Deweese, *supra* note 21, at 18-19.

<sup>39</sup> Stephen Osborn, Avner Vengosh, Nathaniel Warner, & Robert Jackson., *Methane contamination of drinking water accompanying gas-well drilling and hydraulic fracturing*, 108 PNAS 8172, 1 (2011); see also PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF OIL AND GAS MANAGEMENT, 2009 YEAR END WORKLOAD REPORT (2010), available at <http://www.dep.state.pa.us/dep/deputate/minres/oilgas/2009%20Year%20End%20Report-WEBSITE.pdf>.

<sup>40</sup> Jeremy Miller, *Of Hydraulic Fracturing and Drinking Water*, N.Y. TIMES GREEN BLOG (June 30, 2009, 10:17 AM), <http://green.blogs.nytimes.com/2009/06/30/of-hydraulic-fracturing-and-drinking-water/?scp=3&sq=natural+gas&st=blog>.

<sup>41</sup> Press Release, Media Newswire, Obama Administration: No Documented Cases of Hydraulic Fracturing Contamination (Dec. 12, 2009), available at [http://media-newswire.com/release\\_1107527.html](http://media-newswire.com/release_1107527.html).

<sup>42</sup> Stephen Osborn, *supra* note 40, at 1.

<sup>43</sup> *Id.* at 2.

<sup>44</sup> *Id.*

migrate into drinking water: (1) physical displacement of gas solutions from the target areas; (2) leaky gas-well casings; and (3) the creation of new or an increase in existing fractures which can “increase the connectivity of the fracture system.”<sup>45</sup> However, the study states that the most likely culprit is leaky well casings, especially those in shallow wells near drinking water.<sup>46</sup> More notably, residents of Dimock, Pennsylvania complained of physical ailments as well as cloudy water and flammable tap waters in conjunction with fracking operations near their homes, and in the wake of two chemical spills from Cabot Oil & Gas Corporation’s wells.<sup>47</sup> Regardless of whether natural gas drilling operations contaminate drinking water supplies, it is clear that much more research into the potential hazards and environmental effects needs to be conducted.

## **VI. Policy Concerns and Potential Impacts of the FRAC Act**

Aside from environmental concerns, public health concerns are a second major concern in the fracking debate. Natural gas drilling often occurs in rural areas where private landowners rely on groundwater aquifers for their water supply.<sup>48</sup> In Pennsylvania alone there are nearly a million households that rely on private water supplies.<sup>49</sup> These water wells are relied upon for drinking water or agricultural uses, and the migration of methane or their contamination with wastewater could render them non-potable. In addition, residents in areas with natural gas drilling could become sick due to contamination and exposure to toxic chemicals.<sup>50</sup> Chemicals

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<sup>45</sup> *Id.* at 4.

<sup>46</sup> *Id.*

<sup>47</sup> Jon Hurdle, *supra* note 34.

<sup>48</sup> Mark Zoback, Saya Kitasei, & Brad Copithorne, WORLDWATCH INSTITUTE, *Addressing the Environmental Risks from Shale Gas Development* (July 2010), available at <http://blogs.worldwatch.org/revolt/wp-content/uploads/2010/07/Environmental-Risks-Paper-July-2010-FOR-PRINT.pdf>

<sup>49</sup> PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTIONS, *Private Water Wells in Pennsylvania*, <http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/SrceProt/well/default.htm> (last visited Oct. 9, 2011).

<sup>50</sup> OFFICE OF FOSSIL ENERGY, NATIONAL ENERGY TECH. LAB., U.S. DEP’T OF ENERGY, STATE OIL AND NATURAL GAS REGULATIONS DESIGNED TO PROTECT WATER RESOURCES 23 (2009), available at <http://www.gwpc.org/e-library/documents/general/State%20Oil%20and%20Gas%20Regulations%20Designed%20to%20Protect%20Water%20Resources.pdf>.

such as Benzene, a carcinogen, can be used in fracking fluids.<sup>51</sup> Such chemicals have been found to cause significant health issues such as unconsciousness, dizziness, and leukemia with long term exposure.<sup>52</sup> This by itself does not call for a cessation of fracking; however, states and the U.S. EPA should regulate fracking fluids to ensure the safety of the residents of the state, a feat that would be more likely to be met if the FRAC Act is passed.

Industry, on the other hand, sees the disclosure of chemical components in fracking fluid and potential regulation under the SDWA as another obstacle. Many companies argue that the disclosure clause would “put them at a disadvantage,” and many see it as unnecessary and “silly.”<sup>53</sup> This is coupled with the fact that each natural gas company has its own formula for fracking fluid, leading to a question of whether or not the U.S. EPA or states can require the disclosure of such proprietary information.<sup>54</sup> The FRAC Act, however, does not require disclosure of the particular chemical formula composition; instead, it requires disclosure of the chemicals in the mixture and the anticipated volume of chemicals,<sup>55</sup> rendering the trade secret argument virtually moot.

## **VII. Regulation—Federal or State?**

Hydraulic fracking is currently regulated by states,<sup>56</sup> with a number of states such as Pennsylvania, New York and Texas, implementing their own oil and natural gas regulations.<sup>57</sup>

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<sup>51</sup> *Id.*

<sup>52</sup> *Back to Safety and Health Topics: Benzene*, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, UNITED STATES DEPARTMENT OF LABOR, <http://www.osha.gov/SLTC/benzene/> (last visited Oct. 9, 2011).

<sup>53</sup> Lustgarten, *supra* note 7.

<sup>54</sup> *Id.* See also Jeremy Miller, *Of Hydraulic Fracturing and Drinking Water*, N.Y. TIMES GREEN BLOG (June 30, 2009, 10:17 AM), <http://green.blogs.nytimes.com/2009/06/30/of-hydraulic-fracturing-and-drinking-water/?scp=3&sq=natural+gas&st=blog>.

<sup>55</sup> H.R. 1084, 112<sup>th</sup> Cong. (1<sup>st</sup> Sess. 2011); see also S. 587, 112<sup>th</sup> Cong. (1<sup>st</sup> Sess. 2011).

<sup>56</sup> Jim Rubin, *supra* note 3, at 2.

<sup>57</sup> Deweese, *supra* note 21, at 21–31.

Enacting the FRAC Act would make fracking a federally regulated industry. However, states would still be free to regulate fracking in addition to the federal regulations.

States and industry argue that the state has more knowledge of its natural resources and is better equipped to regulate fracking, as its approach has been tailored on a situation-by-situation basis.<sup>58</sup> Because of this tailoring by states, any “added levels of federal oversight would be superfluous to what states have already implemented,” and by adding these increased federal regulations the “states and the American taxpayer will have to foot the bill for the lost revenue.”<sup>59</sup> While industry might feel the same way, adding additional regulations to the state regulations is not superfluous. The SDWA would give the EPA significant authority to force state action to ensure that drinking water is safe.<sup>60</sup> Prior case law and the SDWA has suggested that underground injection practices such as fracking subject drinking waters to potential contaminants that would in fact affect the water safety.<sup>61</sup> Adding an overall federal regulatory scheme under the SDWA would ensure that at the most basic level, groundwater remains uncontaminated. This regulatory scheme could then be coupled with state regulations to allow for the situation-by-situation tailoring, ensuring that fracking protects the environment and public health while still allowing for fracking to continue.

## **VIII. Conclusion**

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<sup>58</sup> *Id.* at 21–22.

<sup>59</sup> *Id.* at 22.

<sup>60</sup> Angela Cupas, Note, *The Not-So-Safe Drinking Water Act: Why We Must Regulate Hydraulic Fracturing at the Federal Level*, 33 WM. & MARY ENVTL. L. & POL’Y REV. 605, 627 (2009).

<sup>61</sup> *Legal Envtl. Assistance Fund v. EPA*, 276 F.3d 1253 (11<sup>th</sup> Circ. 2001) (holding that the EPA’s decision to classify hydraulic fracturing coal beds as a Class II-like “underground injection activity” is inconsistent with the statute but giving EPA broad discretion to regulate). *See also* Angela Cupas, Note, *The Not-So-Safe Drinking Water Act: Why We Must Regulate Hydraulic Fracturing at the Federal Level*, 33 WM. & MARY ENVTL. L. & POL’Y REV. 605, 627 (2009).

As America's energy consumption increases,<sup>62</sup> the oil and gas industry must devise more creative ways of extracting our natural resources from the Earth.<sup>63</sup> Fracking has been used commercially since the 1940s,<sup>64</sup> but new regulation is necessary. The Energy Policy Act of 2005 exempted fracking from the 1974 Safe Drinking Water Act.<sup>65</sup> Environmental and public health concerns coupled with the Energy Policy Act's exemption, have lead representatives in both the Senate and House of Representatives to propose the Fracturing Responsibility and Awareness of Chemicals Act.<sup>66</sup> Under this act the US Environmental Protection Agency would regulate fracking coupled with any regulatory scheme the state's implement. In order to effectively protect the natural environment and public health from fracking contamination, national oversight and the FRAC Act is necessary.

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<sup>62</sup> See ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2011 WITH PROJECTIONS TO 2035, available at [http://www.eia.gov/forecasts/aeo/pdf/0383\(2011\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2011).pdf). According to EIA, current total energy consumption is projected to continue to increase through 2035 to between 110 and 120 quadrillion Btu. *Id.* 20.

<sup>63</sup> Hannah Wiseman, *Untested Waters: The Rise of Hydraulic Fracturing in Oil and Gas Production and the Need to Revisit Regulation*, 20 FORDHAM ENVTL. LAW REV. 115, 115 (2009).

<sup>64</sup> OFFICE OF FOSSIL ENERGY, NATIONAL ENERGY TECH. LAB., U.S. DEP'T OF ENERGY, STATE OIL AND NATURAL GAS REGULATIONS DESIGNED TO PROTECT WATER RESOURCES 23 (2009), available at <http://www.gwpc.org/e-library/documents/general/State%20Oil%20and%20Gas%20Regulations%20Designed%20to%20Protect%20Water%20Resources.pdf>.

<sup>65</sup> See Energy Policy Act of 2005, 42 USC § 300h(d)(1)(B)(ii) (2006).

<sup>66</sup> H.R. 2766, 111<sup>th</sup> Cong. (1<sup>st</sup> Sess. 2009); see also S. 1215, 111<sup>th</sup> Cong. (1<sup>st</sup> Sess. 2009).