

**STATE OF ALABAMA: UNDERGROUND INJECTION
CONTROL PROGRAM REVISION; PROPOSED
RESPONSE TO COURT REMAND
69 Fed. Reg. 18478 (April 8, 2004)**

**COMMENTS
OF
AMERICAN PETROLEUM INSTITUTE, COLORADO OIL AND GAS
ASSOCIATION, DOMESTIC PETROLEUM COUNCIL, DOMINION
RESOURCES, HALLIBURTON ENERGY SERVICES, INC.,
INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA,
INDEPENDENT PETROLEUM ASSOCIATION OF MOUNTAIN STATES,
NEW MEXICO OIL AND GAS ASSOCIATION, OHIO OIL AND GAS
ASSOCIATION, AND US OIL & GAS ASSOCIATION**

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I. INTRODUCTION

These comments are being submitted to the U.S. Environmental Protection Agency (“EPA” or the “Agency”) by a number of organizations – referred to below as the Industry Coalition – involved in oil and gas production in response to the Agency’s *Federal Register* notice of April 8, 2004. *See* 69 *Fed. Reg.* 18478 (2004).¹ In that notice EPA set forth its proposed response to the remand from the U.S. Court of Appeals for the Eleventh Circuit in *Legal Environmental Assistance Foundation, Inc. v. U.S. Environmental Protection Agency*, 276 F.3d 1253 (11th Cir. 2001) (“*LEAF IP*”), addressing Alabama’s program relating to hydraulic fracturing under the federal Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j-26 (“SDWA”). The court in that case has directed EPA on remand to determine whether Alabama’s revised Underground Injection Control (“UIC”) program complies with the requirements for Class II wells under the SDWA. As directed by the court, EPA has undertaken the required review and found that Alabama’s hydraulic fracturing program complies with the requirements for Class II wells to the extent necessary given that this program has been approved under section 1425 of the SDWA, 42 U.S.C. § 300h-4.

The Industry Coalition strongly supports EPA’s proposed determination that Alabama’s revised program complies with the relevant requirements under the SDWA. In essence, the Coalition agrees that it is appropriate for EPA to apply the criteria of section 1425 in determining whether Alabama’s program complies with the requirements for Class II wells given

¹ These comments are submitted on behalf of the following entities and organizations: American Petroleum Institute, Colorado Oil and Gas Association, Domestic Petroleum Council, Dominion Resources, Independent Petroleum Association of America, Independent Petroleum Association of Mountain States, New Mexico Oil and Gas Association, Ohio Oil and Gas Association, US Oil & Gas Association and Halliburton Energy Services, Inc. These commenters are referred to herein in general as the “Industry Coalition.”

that section 1425 served as the original basis for EPA's approval of the Alabama program. This section directs EPA to adopt flexible standards for states seeking to obtain approval of UIC programs related to oil and gas production activities so as not to impede energy production unnecessarily. EPA's proposed determination reflects the specific regulatory status afforded to oil and gas activities – including hydraulic fracturing – under the SDWA and particularly section 1425, and therefore is fully and entirely appropriate.

The Coalition strongly believes that in taking its action, EPA has properly considered the important operational factors associated with hydraulic fracturing activities. Hydraulic fracturing differs in a number of fundamental respects from activities that have been traditionally regulated under UIC Class II programs and a number of EPA's Class II well regulatory requirements therefore cannot be readily applied to hydraulic fracturing activities. These differences between hydraulic fracturing and traditional Class II activities further support EPA's application of the more flexible approval criteria of section 1425 to Alabama's program in order to avoid unnecessarily impeding vital oil and gas production activities in violation of the SDWA.

Finally, the Coalition believes that it is important to emphasize that Alabama's program has already indeed proven to be very effective in preventing endangerment of drinking water sources regardless of any further developments. There have been no confirmed instances of contamination of drinking water wells in Alabama as a result of hydraulic fracturing activities. Indeed, as EPA has itself determined, there have been no confirmed instances of drinking water well contamination due to hydraulic fracturing anywhere in the country. The effectiveness of Alabama's program in preventing endangerment of drinking water sources further confirms the

appropriateness of EPA's determination that Alabama has adequately demonstrated that its program adequately complies with all of the relevant requirements under the SDWA.

II. THE INDUSTRY COALITION AGREES WITH EPA'S PROPOSED DETERMINATION THAT ALABAMA'S HYDRAULIC FRACTURING PROGRAM FULLY COMPLIES WITH THE REQUIREMENTS OF THE SDWA AND THEREFORE WOULD SATISFY ANY POSSIBLE APPLICABLE CLASS II REQUIREMENTS

A. EPA Has Acted Properly In Reviewing Alabama's Program Under the Applicable Section 1425 Requirements

The Coalition agrees with EPA that it is appropriate to apply the approval criteria of section 1425 in determining whether Alabama's program complies with the Class II well requirements. As EPA notes in its recent April 8 *Federal Register* notice, Alabama's revised Class II regulatory program – including Alabama's program for the regulation of hydraulic fracturing – was originally reviewed and approved by the Agency pursuant to section 1425. *See 65 Fed. Reg. 2889 (2000)*. The Eleventh Circuit specifically upheld EPA's determination to review Alabama's program under section 1425, stating that the Agency's decision to approve Alabama's hydraulic fracturing program pursuant to section 1425 was appropriate under the statute. *LEAF II*, 276 F.3d at 1260-61. Therefore, EPA's application of the section 1425 approval criteria to Alabama's hydraulic fracturing program has been fully authorized by the court.

Given the Agency's past actions, EPA must then consider the applicability of any Class II well regulatory requirements in light of the flexible standards established under section 1425. In fact, it would be exceedingly odd if EPA were to now ignore the very statutory authority – section 1425 – that served as the basis for its approval of the Alabama Class II program in the first place. Indeed, EPA would be contravening the clear intent of Congress if it were to ignore the implications of its approval of Alabama's program under section 1425 in

making its determination on remand. Accordingly, EPA's application of the approval criteria set forth in section 1425 to its proposed determination is consistent with and in fact required by the SDWA.

B. The Plain Language of the SDWA and the Legislative History Make Clear That Section 1425 Was Intended to Provide More Flexible Approval Criteria for State Programs Related to Oil and Gas Production

As EPA notes in its proposed determination, both the plain language of section 1425 itself as well as its legislative history amply support the conclusion that this section was enacted to provide more flexible approval criteria for state programs for the regulation of injection activities related to oil and gas development. *69 Fed. Reg.* at 18479. According to these authorities, this flexibility was necessary so that UIC programs would not adversely interfere with or impede critical energy production activities.

In essence, the SDWA expressly provides that states may obtain EPA approval of a UIC program related to oil and gas production by demonstrating compliance with various standards that are far different than those for other UIC programs. For oil- and gas-related activities, any state needs only to *generally* show under the SDWA that its program complies with the overall requirements enumerated under section 1421(b)(1)(A)-(D) rather than making a detailed demonstration that its program fully complies with the specific regulatory criteria spelled out under the Act. 42 U.S.C. § 300h-4(a). Thus, in enacting section 1425 Congress specifically provided that states need only demonstrate compliance with the more general standards of the statute, thereby giving the states much more latitude in structuring their programs to ensure that they are effective in preventing the endangerment of drinking water sources while at the same time not unnecessarily impeding oil and gas production.

The legislative history of the SDWA amply confirms that Congress enacted section 1425 in 1980 in order to provide these flexible standards for oil- and gas-producing states

in meeting the requirements of the Act for approval of state UIC programs. As the House Committee on Interstate and Foreign Commerce noted:

Most of the 32 states that regulate underground injection related to the recovery or production of oil or natural gas (or both) believe they have programs already in place that meet the minimum requirements of the Act including the prevention of underground injection which endangers drinking water sources. This is especially true of the major producing states where underground injection control programs have been underway for years. *It is the Committee's intent that states should be able to continue these programs unencumbered with additional Federal requirements if they demonstrate that they meet the requirements of the Act.*

H.R. Rep. No. 96-1348, at 5 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6080, 6084 (emphasis added). *See also* 126 Cong. Rec. H931 (daily ed. Sept. 20, 1980) (statement of Rep. Broyhill (section 1425 “should free the producing States which have been doing a good job of regulating underground injection relating to oil and natural gas from the requirements of EPA regulations and allow them to continue their current programs”). In further considering section 1425, the Committee went on to state that:

So long as the statutory requirements are met, the States are not obligated to show that their programs mirror either procedurally or substantively the Administrator's regulations A state which has made an alternative demonstration [under section 1425] will be considered to have the same primary enforcement powers and obligations [as] a State that achieved primary by adopting the Administrator's regulations [under section 1422.]

H.R. Rep. No. 96-1348, at 6 (1980), *reprinted in* 1980 U.S.C.C.A.N. 6085. Thus, Congress specifically intended that states seeking approval of their programs under section 1425 would not be required to show that their programs incorporated EPA's detailed regulatory requirements.

In providing these unique criteria for section 1425 UIC programs, Congress was strongly motivated by its primary concern that regulatory requirements imposed under the SDWA should not unduly interfere with the production of needed energy supplies. *See* 126

Cong. Rec. S30188 (daily ed. Nov. 19, 1980) (statement of Sen. Burdick). Accordingly, to ensure that this concern was fully addressed, Congress specifically provided that “[r]egulations of the Administrator under [section 1421] for State underground injection control programs may not prescribe requirements which interfere with or impede” injection activities related to oil and gas production unless such requirements are essential to protect underground sources of drinking water (“USDWs”). 42 U.S.C. § 300h(b)(2). In elaborating on this critical point, the House Committee on Interstate and Foreign Commerce clearly indicated that it was necessary to limit any constraints imposed under the SDWA on energy production, emphasizing that the SDWA:

prohibits regulations for State underground injection control programs from prescribing requirements which would interfere with production of oil or natural gas or disposal of [byproducts] associated with such production, except that such requirements are authorized to be prescribed if essential to assure that underground sources of drinking water will not be endangered by such activity.

* * * *

[T]he Committee sought to assure that constraints on energy production would be kept as limited in scope as possible while still assuring the safety of present and potential sources of drinking water.

H.R. Rep. No. 93-1185, at 31 (1974), *reprinted in* 1974 U.S.C.C.A.N. 6454, 6483-84. Thus, the legislative history amply confirms that Congress intended that states be provided with sufficient flexibility in structuring their programs for regulating injection activities associated with oil and gas development and that states not be overburdened with detailed EPA regulatory requirements that might impede vital energy production efforts.

C. Longstanding EPA Guidance and Agency Practice Further Support the Agency’s Proposed Approach

Consistent with these congressional directives, EPA has long recognized that in seeking approval of UIC programs, the states have discretion in determining how to structure regulatory programs for energy-related activities that are to be considered under the section 1425

criteria. While EPA has not issued specific regulations setting forth requirements for such programs, the Agency has nevertheless issued guidance that states may follow in developing programs pursuant to section 1425. *See* 46 *Fed. Reg.* 27333 (1981). In issuing its guidance, EPA stated that it was “mindful of the fact that, in enacting Section 1425, Congress intended that States be offered an alternative to the detailed requirements of the regulations promulgated at 40 CFR [Parts 144, 145] and 146 and that State programs to control injections related to oil and gas production be considered on their merits.” *Id.* Accordingly, EPA’s guidance is “much less detailed” than the regulations that apply to other UIC programs and “leaves a great deal more discretion to the State to develop and EPA to approve State UIC programs under Section 1425.” *Id.* at 27334.

Moreover, EPA’s past practice in reviewing the adequacy of state UIC programs governing Class II oil and natural gas activities also demonstrates that the Agency itself has consistently taken the position that its detailed regulations are inapplicable to state programs which are subject to approval under section 1425 of the SDWA. For example, in approving several state programs under section 1425, EPA has expressly noted in the past that the regulatory requirements in Parts 124, 144, 145 and 148 and the technical standards set forth in Part 146 for various classes of wells should not apply to these approved programs. *See, e.g.*, 49 *Fed. Reg.* 13040 (1984) (in approving the State of Colorado’s UIC program under section 1425, EPA specifically noted that the state’s program would not be required to meet “. . . the Federal Regulations (40 C.F.R. Parts 124, 144, and 145) and related Technical Criteria and Standards (40 C.F.R. Part 146); *see also* 61 *Fed. Reg.* 58933 (1996) (EPA approved the State of Montana’s Class II program under section 1425 with the same exemptions). Thus, EPA’s determination regarding the issue on remand also is fully consistent with its prior guidance indicating that a

state “section 1425” program need not comply with EPA’s detailed regulatory requirements for Class II wells.

D. EPA Has Properly Concluded That Alabama’s Program Complies With Any Potentially Applicable Requirements for Class II Wells Within the Context of Section 1425’s Approval Criteria

In light of the more flexible approval criteria under section 1425, EPA properly determined that Alabama has made a sufficient demonstration that its program meets the requirements for Class II wells. According to section 1425, the Industry Coalition believes that Alabama was not specifically required to demonstrate that its program complies with all of the detailed requirements for Class II wells set forth in EPA’s regulations in order to qualify for approval. Rather, consistent with the plain language and legislative history of the SDWA as well as EPA’s longstanding interpretation of the statute, Alabama was instead required only to demonstrate that (1) its program meets the four general criteria set forth in section 1421(b) and (2) its program was effective in preventing the endangerment of drinking water sources. EPA has previously determined that Alabama has met both of these criteria, a determination that was also subsequently upheld by the Eleventh Circuit in *LEAF II*. *Id.* at 1265. Consequently, as EPA properly concluded in its proposed determination, “a finding that [a state’s Class II program], or component thereof, meets the Class II approval requirements of section 1425 means that such a program, by virtue of that finding, necessarily complies with all applicable statutory and regulatory requirements for Class II wells.” 69 *Fed. Reg.* at 18480.

In sum, Alabama demonstrated to the satisfaction of EPA and the court that its program for the regulation of hydraulic fracturing met the requirements of the SDWA and was sufficiently effective in preventing endangerment of USDWs to warrant approval of its program. Alabama’s program can therefore be said to fully meet any applicable requirements for Class II wells to the extent required under section 1425 of the SDWA.

III. EPA HAS PROPERLY RECOGNIZED THAT IT IS IMPORTANT TO CONSIDER THE UNIQUE ASPECTS OF HYDRAULIC FRACTURING WHICH DISTINGUISH IT FROM OTHER INJECTION ACTIVITIES THAT HAVE HISTORICALLY BEEN SPECIFICALLY REGULATED UNDER CLASS II PROGRAMS

The Coalition agrees with EPA that it is critical for the Agency to continue to take into account the significant ways in which hydraulic fracturing differs from the types of activities that have traditionally been regulated under Class II programs. As EPA has noted, the Agency “appropriately exercised the discretion and flexibility inherent in section 1425” to approve Alabama’s program in 2000 in light of “the unique technical and temporal aspects of hydraulic fracturing.” 69 *Fed. Reg.* at 18480. The Coalition believes that any failure to consider these differences may result in the imposition of imprudent and overly burdensome regulatory requirements on hydraulic fracturing activities that may unnecessarily impede oil and gas production in violation of the SDWA.

A. Hydraulic Fracturing Is a Well Completion Activity That Is Part of the Oil and Gas Production Process, Not a Waste Disposal Activity

Hydraulic fracturing differs in many key respects from the various other types of activities associated with what have traditionally been viewed as Class II wells under EPA’s UIC well classification scheme. Under EPA’s UIC system, any wells that are categorized as Class II wells include wells that are used for various “waste disposal” types of activities such as the reinjection of brine or “produced water” and/or other waste materials that are pumped from oil and gas wells during production. As part of these operations, unwanted produced water, which is a byproduct of oil and gas production, is injected into subsurface formations for purposes of disposal and these produced waters and other fluids are intended to be left in the subsurface. Other types of wells that are generally regulated under the Class II category include wells that are used to pump water or other fluids into the ground to stimulate the flow of oil and gas in

production wells. The fluids that are injected into the subsurface as part of these “secondary” or “tertiary” oil and gas recovery processes are likewise left in the subsurface. Consequently, those types of wells that are regulated under the UIC Class II program are wells that are solely used for injection of wastes and other fluids that are intended to be left in the subsurface.

In contrast, hydraulic fracturing is an activity that takes place in the production well itself and is a part of the process of completing the well and preparing it for the production of oil and gas. Moreover, the fluids that are pumped into the subsurface as part of the hydraulic fracturing process are intended to be removed from the formations into which they are pumped. In fact, studies of coalbed methane (“CBM”) wells in Alabama have shown that 80 percent or more of the fluids pumped into a well during the hydraulic fracturing process are eventually recovered from the well during the production process. *See Palmer, et al., Water fracs outperform gel fracs in coalbed pilot*, Oil and Gas Journal (Aug. 12, 1991) at 71. Given these differing characteristics, the Industry Coalition urges the Agency to continue to recognize the key differences between hydraulic fracturing and these activities regulated under Class II controls.

In addition, hydraulic fracturing operations differ in several other key respects from the types of activities that are associated with traditional Class II wells. For example, hydraulic fracturing activities associated with traditional Class II wells generally take place over an extended period of time, often lasting years. In contrast, hydraulic fracturing operations typically last only a few hours. As EPA has previously recognized, it may not be appropriate to apply regulations that were designed for wells that operate as injection wells over many years to production wells into which fracturing fluids may be pumped for a fraction of a day. Thus, for these and other important reasons, hydraulic fracturing differs from traditional Class II well

injection activities in numerous fundamental respects that must be taken into account in assessing whether Alabama's program complies with Class II well requirements.

B. The Application of EPA's Class II Well Regulatory Requirements to Hydraulic Fracturing Would Unnecessarily Impede Oil and Gas Production

As EPA recognized in its proposed determination, under these circumstances the strict application of EPA's Class II well regulations to production wells that are being hydraulically fractured could impose unnecessary restrictions on important energy production activities. If literally applied to hydraulic fracturing, there are numerous instances where the imposition of Class II regulatory requirements could unnecessarily and imprudently add serious impediments to all hydraulic fracturing practices and have unwarranted impacts on the production of oil and gas, contrary to the express requirements of the SDWA. For example, in considering siting requirements under the SDWA, these requirements could certainly have the untoward effect of unnecessarily impeding hydraulic fracturing activities if these activities were required to merit these very specific siting requirements. Under the UIC Class II well regulations, all new Class II wells are required to be sited in such a manner that they inject into a formation which is separated from any USDW by a confining layer. 40 C.F.R. § 146.22(a). Consequently, this requirement would have the specific effect of restricting any production activities that would involve the injection of fluids into a USDW. However, the Agency itself has asserted that many of the coal seams in Alabama and elsewhere around the country which are currently targeted for CBM development using hydraulic fracturing techniques currently contain aquifers that could qualify as USDWs. *See DRAFT Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs*, U.S. Environmental Protection Agency Office of Water (Aug. 2002) ("*Hydraulic Fracturing Study*") at 5-14 (ten of eleven coal basins – including the Black Warrior Basin in Alabama – are likely to

be located wholly or partially within USDWs). Hydraulic fracturing is necessary in many of these areas to make production from a CBM well cost-effective. Accordingly, a prohibition on hydraulic fracturing in the formations identified by EPA as potentially containing USDWs could have very serious implications for long-term energy production in the United States.

A number of other UIC Class II regulatory requirements likewise cannot be readily applied to hydraulic fracturing operations without potentially disruptive effects on such operations. For example, under these Class II regulations, all injection wells must be cased and cemented to prevent the movement of fluids into USDWs. 40 C.F.R. § 146.22(b)(1). Production wells such as coalbed methane wells are typically cased and cemented for the first several hundred feet below the surface to ensure that there is no contamination of the types of shallow aquifers that may be more likely to serve as drinking water sources. However, an absolute requirement for casing and cementing through all USDWs could be viewed as prohibiting the perforating of the well casing which is a standard and necessary part of the hydraulic fracturing process. Moreover, under the UIC Class II regulatory requirements, injection pressures at the wellhead for Class II wells must be maintained “so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDWs. In no case shall injection pressure cause the movement of injection or formation fluids into [a USDW].” 40 C.F.R. § 146.23(a). The strict imposition of this Class II regulatory requirement would be fundamentally inconsistent with the very nature of the hydraulic fracturing process itself, the purpose of which is to cause the movement of injection fluids into the formation in order to create new fractures.

In addition to these regulations concerning fluid movement, several of EPA’s monitoring requirements for Class II wells make little sense when applied to hydraulic fracturing

operations. For example, EPA's regulations require that certain parameters such as injection pressure, flow rate, and cumulative volume be monitored weekly or monthly and in some cases on a daily basis. 40 C.F.R. § 146.23(b)(2). Such requirements for ongoing monitoring would simply not apply or be practical for an activity such as hydraulic fracturing that only takes several hours to complete.

Given the above, any application of these Class II regulatory requirements to hydraulic fracturing would impose significant disruptive effects on our nation's overall energy production. The U.S. currently consumes approximately 22 trillion cubic feet ("Tcf") of natural gas on an annual basis, or about 25 percent of the total U.S. energy demand. Approximately 85 percent of our current natural gas needs are supplied from domestic natural gas production activities. *See Annual Energy Outlook 2004*, U.S. Department of Energy, Energy Information Administration (2004), at 4, 7. Based in part on its clean-burning qualities and commensurate environmental benefits, natural gas consumption is expected to increase significantly in the future. In fact, as EPA itself has noted that natural gas demand in the U.S. is expected to increase at least 45 percent in the next 20 years. *Hydraulic Fracturing Study* at ES-1. Under these circumstances, continued production of natural gas through essential processes such as hydraulic fracturing would have significant environmental benefits and help ensure our nation's energy security. Not only would the production of natural gas help to continue to support the production of our domestic energy resources and reduce our dependence on foreign energy sources, but it would also help to reduce sulfur dioxide, nitrogen oxides, and particulate emissions.

While natural gas is a primary resource to help us meet our future energy needs, there are a variety of factors that will influence whether the U.S. can meet this growing demand

for natural gas, including price, access to natural gas reservoirs, and the ability to collect gas from “unconventional” reservoirs. Unconventional reservoirs represent from 25 to 50 percent of the remaining undeveloped gas resources. These reservoirs have very low permeability and in many cases production of methane from such reservoirs is economically viable only if production can be enhanced through well stimulation, typically using hydraulic fracturing technologies. In fact, consistent with these recognized general trends, between 60 and 80 percent of the new gas wells developed over the next decade are expected to require hydraulic fracturing. *Meeting the Challenges of the Nation’s Growing Natural Gas Demand*, National Petroleum Council (1999). Thus, limitations on the use of hydraulic fracturing could have very significant implications for domestic energy production.

In sum, a number of EPA’s detailed regulatory requirements for Class II wells could cause significant disruptions to hydraulic fracturing operations if strictly applied to such operations. As the Agency itself has noted, “EPA’s Class II regulations were not designed to, and do not specifically address the unique technical and temporal attributes of hydraulic fracturing.” 69 *Fed. Reg.* at 18480. As discussed above, Congress specifically provided in the Act that EPA was not to impose regulations which interfere with or impede oil and gas production activities unless such requirements are essential to ensure that such activities will not endanger USDWs. 42 U.S.C. § 300h(b)(2). Moreover, as discussed below, there is no evidence that the application of any of these detailed regulatory requirements is necessary at all to protect USDWs from endangerment. Accordingly, these concerns regarding the potential for interference with oil and gas production further support EPA’s determination that Alabama is not required to comply with all of EPA’s detailed regulatory requirements for Class II wells and that

Alabama's program meets any applicable requirements for Class II wells in accordance with the flexible standards of section 1425.

IV. THE ALABAMA PROGRAM HAS BEEN EFFECTIVE IN PREVENTING ENDANGERMENT OF DRINKING WATER SOURCES

The Industry Coalition believes that EPA's historical reliance on the overall effectiveness of Alabama's program in preventing endangerment of USDWs is proper and justifiable. EPA has previously emphasized that Alabama's program is effective at preventing endangerment of USDWs and has indicated that this was a critical factor in its decision to approve Alabama's program under section 1425 in 2000. *69 Fed. Reg.* at 18480. EPA should again consider the "overall effectiveness" of Alabama's program in preventing endangerment of USDWs in making its requisite determination in reply to the court's remand in *LEAF II*.

EPA's determination that Alabama's program would be effective in preventing endangerment of USDWs, which was upheld by the Eleventh Circuit, *see LEAF II*, 276 F.3d at 1265, was based in part on numerous provisions contained in the Alabama regulations that ensure that hydraulic fracturing activities will not adversely affect the health of persons. For example, consistent with the EPA requirements, the Alabama regulations specifically include an express provision prohibiting any hydraulic fracturing activities that would adversely affect human health. Ala. Admin. Code r. 400-3-8-.03(2). In addition, these regulations also contain numerous other key provisions relating to hydraulic fracturing such as a prohibition on hydraulic fracturing within 300 feet of the surface, where most drinking water wells are found. *Id.* r. 400-3-8-.03(d). Under the Alabama regulations, an applicant must provide, for proposed fracturing activities from 300 to 750 feet below ground surface, information regarding the locations of nearby drinking water wells and the Alabama Oil and Gas Board is authorized to deny approval of a proposed hydraulic fracturing activity if any such wells could be adversely impacted by the

proposed activity. *Id.* r. 400-3-8-.03(c)(3). Moreover, consistent with EPA guidance, such applicants must provide the Board with a description of the proposed fracturing operation, including the maximum length of the fractures to be created in the coalbed formation and the types of fluids and materials to be used in the fracturing operations. *Id.* r. 400-3-8-.03(c)(4). In addition, all applicants seeking approval of underground injection activities must provide well logs showing that there is an adequate confining layer to prevent upward migration of fracturing fluids. *Id.* r. 400-3-8-.03(a)(5). Applicants also must provide information to the Board concerning the construction of the CBM well that is to be fractured in order to demonstrate that the well itself will not serve as a conduit for the transmission of contaminants from deeper formations where fracturing is to occur to shallower formations where drinking water wells may be found. *Id.* R. 400-3-8-.03(a)(2), (3). These provisions are more than adequate to prevent the endangerment of USDWs, as demonstrated by the fact that there is no evidence that any drinking water wells in Alabama have ever been contaminated due to hydraulic fracturing activities.

EPA's recent draft study regarding hydraulic fracturing of CBM wells has again confirmed that hydraulic fracturing activities have not caused any adverse environmental contaminating effects. *See Hydraulic Fracturing Study* at ES-1. In describing this study, EPA has indicated that it is the most extensive study ever undertaken of the potential impact of the hydraulic fracturing of CBM wells on USDWs. *Id.* This draft report concludes that the potential threat to USDWs posed by hydraulic fracturing of coalbed formations such as occur in Alabama is low and that, although thousands of CBM wells are hydraulically fractured nationwide on an annual basis, there is no persuasive evidence that any drinking water wells have been contaminated by such fracturing operations. *Id.*

The Coalition strongly supports the fundamental conclusion of the *Hydraulic Fracturing Study*, *i.e.*, that the potential threats to USDWs that are posed by hydraulic fracturing of CBM wells are low. This conclusion is fully consistent with the experience of the Coalition's members that CBM well construction practices generally, and hydraulic fracturing specifically, are carried out in a manner that is consistent with state regulations and that is designed to be protective of the environment. For example, in accordance with state requirements, CBM wells are constructed using zonal isolation techniques that ensure that fracturing fluids and other materials in the wellbore will not come in contact with shallow aquifers that are most likely to be used as drinking water sources. These techniques include the use of well casing and cementing of the well annulus to seal the wellbore from the surrounding formation. In addition, as EPA notes in the *Hydraulic Fracturing Study*, many states have requirements that are designed to insure that CBM wells are not located in close proximity to drinking water wells. At 7-3. These are just a few of the longstanding state regulatory requirements and industry practices that have combined to insure that drinking water sources have historically been protected.

Moreover, as the *Hydraulic Fracturing Study* also acknowledges, the high quality waters that are typically used as drinking water sources are typically far removed from the formations that are hydraulically fractured to recover methane. For example, coalbed methane and drinking water are produced from different parts of the Pottsville Formation in Alabama. Most of the good quality drinking water in the Pottsville Formation is found at less than 300 feet deep, while in contrast, most coalbed methane producing zones are much deeper, ranging from 1,000 feet to 4,000 feet below ground surface. *See Coalbed Methane in Alabama*, Geological Survey of Alabama Circular No. 192 (1997), at 9-10. In addition, the drinking water obtained from shallow wells drilled into the Pottsville Formation is typically produced from naturally-

occurring fractures in the rocks. This fracture distribution is highly variable and interconnections with deeper CBM production zones are unlikely to occur. At the same time, the intervening formations between the shallow aquifers that are utilized for drinking and the deeper coalbed methane zones consist predominantly of mudstones and tight sandstones, which are of low permeability and which would therefore greatly restrict the movement of groundwater. *Id.* at 11, 38. In rare cases where interconnections may occur, the groundwater flow gradient will likely be towards the CBM well, which would be pumping water at a substantially higher rate than the drinking water well. Thus, given these hydrogeological conditions, any migration of fracturing fluids from a CBM well to a drinking water well is extremely unlikely.

Given current hydraulic fracturing practices, it is not at all surprising that EPA has found no persuasive evidence that hydraulic fracturing has ever caused contamination of a drinking water well despite the fact that these techniques have been in commercial use for over 50 years and have been used extensively with respect to CBM wells over the last 20 years. In the course of these two decades, thousands of CBM wells have been hydraulically fractured. As EPA noted in the *Federal Register* notice announcing the availability of the *Hydraulic Fracturing Study*, “[i]f threats to USDWs from hydraulic fracturing of coalbed methane wells were significant, EPA would expect to have found confirmed instances of water well contamination from the practice. Instead, EPA did not find persuasive evidence that any drinking water wells have been contaminated by hydraulic fracturing related to CBM production.” 67 *Fed. Reg.* 55249, 55250 (2002). EPA’s conclusion in this regard is consistent with the prior findings of the Ground Water Protection Council in its 1998 survey of state regulators covering more than 10,000 CBM wells.

The demonstrated effectiveness of Alabama's program in preventing the endangerment of USDWs further supports EPA's determination that Alabama's program complies with any applicable Class II well requirements in the context of section 1425 and that Alabama's program need not comply with EPA's detailed regulatory requirements for Class II wells. No purpose would be served by applying a detailed set of Class II regulatory requirements to a program that has already proven to be effective for many years in ensuring that USDWs are not endangered. EPA has therefore appropriately concluded that Alabama's program complies with any applicable requirements for Class II wells.

CONCLUSION

In sum, the Industry Coalition fully supports Alabama's proposed determination that Alabama's program for the regulation of hydraulic fracturing complies with the requirements for Class II wells to the extent that any such requirements may be applicable to hydraulic fracturing activities. The Coalition believes that EPA has properly concluded that the compliance of Alabama's program with the Class II requirements must be assessed in the context of section 1425's approval criteria, which served as the basis for EPA's approval of Alabama's regulatory program. Given the clear congressional intent to provide flexible approval standards under section 1425, EPA has properly determined that Alabama need not demonstrate that its program strictly complies with all of EPA's regulatory requirements for Class II wells and that Alabama has made a sufficient demonstration that its program complies with EPA's requirements for Class II wells to the extent required under section 1425. The Industry Coalition believes that any contrary conclusion could lead to the imposition of unnecessary requirements that would threaten to significantly disrupt critical energy production activities in violation of the SDWA.