EPA Public Stakeholders Webinar on Hydraulic Fracturing Using Diesel Fuels
Wednesday, June 15, 2011

Meeting Summary

Webinar Purpose

EPA held webinars in May 2011 with states, tribes, federal agencies, industry, and environmental non-governmental organizations. In those webinars, EPA engaged in outreach with stakeholders on approaches that the Underground Injection Control program may use to develop guidance for permitting the use of diesel fuels in hydraulic fracturing for oil and natural gas extraction. Hydraulic fracturing using diesel fuels is considered a Class II injection activity. In the webinars held in May 2011, questions posed to stakeholders by EPA included the following:

- What should be considered "diesel fuels"?
- What are important siting considerations?
- What suggestions do you have for reviewing the area around the well to ensure there are no conduits for fluid migration into underground sources of drinking water?
- What should the permit duration be, considering the intermittent nature of hydraulic fracturing and Class II plugging and abandonment provisions?
- What well construction requirements should apply to hydraulic fracturing wells using diesel fuels?
- What well operation and mechanical integrity requirements should apply to hydraulic fracturing wells using diesel fuels?
- What well monitoring and reporting requirements should apply to hydraulic fracturing wells using diesel fuels?
- What information should be submitted with the permit application?
- What should the time frame be for submitting a Class II diesel fuels hydraulic fracturing permit?
- What are alternatives for authorizing/permitting Class II wells using diesel fuels for hydraulic fracturing?
- How do the Class II financial responsibility requirements apply to wells using diesel fuels for hydraulic fracturing?
- What public notification requirements or special environmental justice considerations should be considered for authorization of wells using diesel fuels for hydraulic fracturing?

In this webinar for public stakeholders, EPA presented background on the Underground Injection Control program, an overview of the guidance approaches, and an overview of information gathered during the stakeholder webinars held in May 2011. The presentations were followed by a question and answer session in which the public was invited to comment on the information presented and propose additional approaches to permitting hydraulic fracturing using diesel fuels.

Introductory Presentations

Bruce Kobelski (Acting Chief, Drinking Water Protection Division – Prevention Branch, EPA) presented basic information on EPA's Underground Injection Control program, outlining the history and purpose of the program. Under the Safe Drinking Water Act, the Underground Injection Control program is mandated to prevent the contamination of underground sources of drinking water through migration from injection wells. The presenter described the six well classes, including the new Class VI for geologic sequestration of carbon dioxide. The technical requirements of the Underground Injection Control program fall into several broad categories, including site characterization, area of review, well construction, operation and monitoring, mechanical integrity testing, and well plugging and closure. All injection must be authorized by a permitting agency. Forty states and two tribes have primary enforcement responsibility (primacy) for all or some Underground Injection Control well classes, while other programs are under direct implementation by EPA.

Ann Codrington (Acting Director, Drinking Water Protection Division, EPA) outlined EPA's mandate to create a permitting guidance for hydraulic fracturing using diesel fuels. While most hydraulic fracturing activities are excluded from the Safe Drinking Water Act under the Energy Policy Act of 2005, hydraulic fracturing using diesel fuels is not and is subject to Safe Drinking Water Act requirements. The guidance aims to clarify existing Underground Injection Control Class II regulations, providing recommendations for permit writers so that permitting of hydraulic fracturing activities using diesel fuels provides the required protection of underground sources of drinking water.

Ms. Codrington presented a summary of input from states, tribes, federal agencies, industry, and environmental organizations provided during a series of webinars in May 2011 on the key issues for developing guidance on the use of diesel fuels in hydraulic fracturing. The meeting summaries from previous webinars will be available on the EPA website, as well as the presentations from this webinar.

Webinar Discussion Summary

EPA noted that due to time constraints and the large volume of questions submitted, the Agency would only bring up for discussion general issues pertaining to the guidance. Questions and comments specific to particular formations or geographic areas were not covered in the webinar discussion.

<u>The guidance process</u>

- EPA clarified that the Agency will spend the next month or more considering the information gathered during the stakeholder webinars in May and June.
- EPA reiterated that the guidance is not regulation but is intended to provide information to assist permit writers in permitting the use of diesel fuels in hydraulic fracturing. When the guidance document is released, states may choose to follow it in its entirety, in part, or not at all.
- A participant requested a 90-day comment period to comment on the proposed guidance.

<u>The 2003 Memorandum of Agreement</u>

- EPA clarified that the Memorandum of Agreement signed in 2003 with the major service companies operating at that time specified that the service companies would not use diesel fuels in hydraulic fracturing in coal-bed methane formations. If these companies did use diesel fuels, the Memorandum of Agreement specified that they would obtain authorization from the primacy agency before doing so.
- EPA clarified that the Memorandum of Agreement was specific to coal-bed methane formations and injection into underground sources of drinking water, and was a voluntary agreement that was not enforceable under law.

Hydraulic Fracturing and the Energy Policy Act of 2005

- In response to participant questions about the exemption of hydraulic fracturing from Underground Injection Control requirements, EPA clarified that every type of hydraulic fracturing that does not use diesel fuels and is related to oil and gas operations is exempt.
- EPA clarified that the Safe Drinking Water Act includes a provision for imminent and substantial endangerment of drinking water. Although hydraulic fracturing is exempt from Underground Injection Control requirements as described above, EPA can address situations where drinking water or public health is in danger under the Safe Drinking Water Act.

Industry lawsuit

- A participant asked for clarification of the status of the industry lawsuit regarding the statement on EPA's website related to permitting hydraulic fracturing using diesel fuels. EPA clarified that briefs have been filed by both parties to the lawsuit. They will be reviewed and the oral arguments heard this fall.

Integration of the guidance process with EPA's ongoing hydraulic fracturing study

- EPA clarified that the study plan for the ongoing hydraulic fracturing study has been reviewed by the Science Advisory Board. Preliminary results are currently scheduled for release in 2012, and further results in 2014.
- Because of the Congressional mandate to permit the use of diesel fuels in hydraulic fracturing immediately, EPA clarified that the guidance will be developed as soon as possible to fulfill this mandate and will then be further informed by the results of the ongoing study upon their release.

Extent of diesel fuels use

- EPA clarified that publically available information on the extent of diesel fuel use in hydraulic fracturing comes from the Waxman report. The report found that about 32 million gallons have been used, although this number may not represent all diesel fuel use in the country.
- EPA clarified that information on where and when diesel fuels are used is often proprietary and therefore is not always provided to the Agency.

Definition of "diesel fuels"

- Several participants discussed the definition of "diesel fuels." EPA clarified that the definition will be determined based on which possible definition is most consistent with the intent of the Safe Drinking Water Act and the Congressional mandate to permit diesel fuels.
- A participant suggested that all petroleum distillates that include the same toxic and carcinogenic components as diesel be considered "diesel fuels" in the context of this guidance.
- A participant suggested that the definition of diesel fuels for this guidance should be based on a de minimis percentage of diesel-range organics in the additives or carrier fluid.
- A participant suggested that there be a minimum concentration of diesel fuels in the fracture fluid above which permitting is required.
- EPA suggested that some states are encouraging operators to use alternative fluids, and some companies are starting to use alternatives such as mineral oils.
- EPA clarified that the concern is not how hazardous diesel fuels are compared to the fluids in petroleum-bearing formations, but whether any of these fluids have the potential to migrate into underground sources of drinking water.
- A participant mentioned that some operators in West Virginia are using propane in fracturing and asked whether this would be included in the guidance.

Permit duration and requirements

- EPA summarized input from stakeholders in the May 2011 webinars. Suggestions from participants of those webinars included the following:
    - Since hydraulic fracturing is an intermittent activity, Underground Injection Control permits should not be in effect after the fracture activity is complete.
    - Some of the fracture fluid remains in the ground after the fracture activity is complete. Therefore, the Underground Injection Control permit should apply for the duration of the life of the well.
- EPA clarified that it is easier to apply the existing Class II regulations to an activity that is considered to be continuous, not intermittent. In that case, the permit would last for the duration of the continuous activity, and the well would be plugged and abandoned at the end of the activity.
- EPA clarified that input from the industry and states suggested that hydraulic fracturing is an intermittent activity since wells may be re-fractured months after the initial hydraulic fracturing activity is complete, and may even enter a production phase in the interim.
- A participant suggested that hydraulic fracturing should not be considered an intermittent activity since the fluids used in hydraulic fracturing remain in the ground for a long time. The participant suggested that financial responsibility requirements remain in place for the duration that fluids from hydraulic fracturing remain in the ground. Participants representing environmental justice communities also suggested that financial responsibility requirements remain in place after the hydraulic fracturing activities are complete.

- A participant asked how primacy agencies will know who needs a permit, given that whether or not companies are using diesel fuels can be proprietary information. EPA clarified that under the Underground Injection Control program, including Class II, EPA makes the requirements of the regulations clear and it is up to the operators to apply for permits to be in compliance with the regulations. EPA expects that the guidance will clarify in what situations a permit is required.
- EPA clarified that there is discretion in the regulations for permit writers to provide flexibility in the type of permit offered (e.g., area permits). EPA is requesting suggestions on what alternative permitting could be effective. A participant suggested that a general, regional, or area permit cannot provide the necessary site-specific information for siting of a well that will undergo hydraulic fracturing.
- EPA clarified that the regulations also allow discretion on the part of permit writers to request additional information or apply additional requirements in order to adequately protect underground sources of drinking water.
- A participant suggested that EPA consider adding to the guidance that no permits will be issued to an applicant that has had a previous Notice of Violation under the Clean Water Act or Resource Conservation and Recovery Act.
- A participant suggested that the permit to inject diesel fuels expire after the initial fracturing activity. Any requirement to monitor for a longer period of time should be explicit in the original permit. The results of follow-up monitoring should be required before an additional permit is approved for that site.
- EPA clarified that whether the information collected from the operator (e.g., site characterization data) is available to the public depends on the requirements of individual states.
- A participant suggested that real-time monitoring of surrounding water wells be required.
- A participant asked how established aquifer exemptions are considered when hydraulic fracturing using diesel fuels is planned.
- EPA acknowledged the challenge of developing one guidance considering that each hydraulic fracturing activity is different and dependent on site-specific data.

<u>Environmental Impact Statement</u>

- Following participant questions on whether an Environmental Impact Statement would be required as part of the permitting process, EPA clarified that Underground Injection Control permitting subsumes National Environmental Policy Act requirements for an environmental impact statement.
- A participant asked whether an Environmental Impact Statement would be done for the guidance as a whole. EPA answered that Environmental Impact Statements are not typically done for guidance documents and clarified that the guidance will provide additional information for permit writers but does not alter the existing regulations.

<u>Disposal of produced waters</u>

- Regardless of whether produced waters come from hydraulic fracturing activities or other activities under the Underground Injection Control program, EPA clarified that there are several methods of disposal currently in use:

    - Produced waters can be re-injected into brine disposal wells, which are also managed under the Underground Injection Control Class II requirements.
    - Produced waters can be sent to a publically owned treatment works, although the quality of water must meet certain requirement.
    - West of the 98th meridian, produced waters can be discharged to water bodies or to land if there is an approved agricultural use.
    - Produced waters can be recycled for re-use in the well.
- A participant suggested that produced waters from hydraulic fracturing activities be tested for endocrine disrupters, volatile organic contaminants, semi-volatile compounds, and toxic organics.

Well closure

- In response to a participant request, EPA stated that the Underground Injection Control regulations for well closure are at 40 CFR 144.51(p) and 40 CFR 146.10.
- EPA clarified that the plugging and abandonment requirements under the Underground Injection Control program are intended to ensure that abandoned wells do not create conduits for fluids to migrate into underground sources of drinking water. To the extent that a well is not plugged and abandoned correctly according to the requirements, EPA clarified that the Agency can take enforcement action.

Application for primacy

- EPA clarified that under section 1425 of the Safe Drinking Water Act, states applying for primacy have the option of following the minimum standards of the federal program or providing different standards that are demonstrated as being as effective as the federal requirements. EPA clarified that primacy agencies should remain in communication with their EPA Regions and EPA Headquarters, reviewing and revising the primacy programs as necessary.

Compliance and enforcement

- If a state or tribe has primacy for its Class II Underground Injection Control program, EPA clarified that the federal agency can withdraw primary enforcement responsibility from the primacy agency if the state or tribe is not enforcing regulatory requirements or if there is a situation in which drinking water is endangered.
- EPA clarified that, currently, if an operator is conducting hydraulic fracturing activities using diesel fuels without a permit, they are operating illegally under the Safe Drinking Water Act and the implementing program has the authority to take action for noncompliance. Additional information is available on the Office of Enforcement and Compliance Assurance website.
- A participant suggested that the guidance include remediation requirements.

Integration with Class VI activities

- A participant asked whether a permit could be issued to a geologic sequestration of carbon dioxide project under Class VI regulations in the same area as wells permitted for hydraulic fracturing. EPA clarified that the Class VI siting requirements specify that the confining zones be free of faults and fractures. In an area where hydraulic fracturing is extensive, EPA suggested that the permitting agency would carefully consider the site-specific geology, compatibility of the fluids used in hydraulic fracturing with carbon dioxide and other formation fluids, and other critical factors in deciding to issue permits.

Follow-up Discussion with States

<u>Current state requirements for hydraulic fracturing using diesel fuels</u>

- Wyoming recently amended their rules to include area of review requirements and testing, although these are not mandatory. Public notification is not included in the new rules.
- Nebraska mentioned that their requirements do not distinguish between diesel fuels used as a carrier fluid and diesel fuels used as additives.
- Louisiana has no requirement to report the make-up of the fluid used in hydraulic fracturing. There are proposed rules to require this.

<u>Suggested requirements for hydraulic fracturing using diesel fuels</u>

- Oklahoma suggested that public notification should not be required for every intent to drill, and should only be required if the applicant is proposing to do something different than the general rules.
- A participant suggested that there should not be area of review requirements because a large number of cases do not have producing zones that might affect shallower aquifers. The area of review for horizontal wells should be modified to include the area around the lateral.
- Testing and construction requirements should include mechanical integrity testing.

<u>Permit duration</u>

- A state participant suggested that there should be a turnaround time for permits of a few days to work within current standard timeframes.
- Oklahoma suggested that operators be required to issue a new intent to drill for re-fracturing activities.
- A state participant suggested that a work-over permit or sundry notice be issued.
- A state participant suggested that permit-by-rule may be appropriate if states can get approval for program revision from EPA.
- A state participant suggested that area permits could be acceptable when addressing circumstances unique to a certain area.

<u>How will the definition of “diesel fuels” impact state workload?</u>

- A state suggested that if there is a broad definition, more permit applications are likely to be submitted. The participants stated that fees are currently $250 for an Underground Injection Control permit and $200 for a drilling permit.
- Oklahoma stated that major service companies are not including diesel in their current formulations, but there may be diesel in stockpiled materials.
- Oklahoma suggested that there be a permitting program for Class II R/D and one for oil and gas.

General comments on the guidance

- Oklahoma commented that states would like some clarification from EPA on what is expected from them.
- State participants commented that the definition of "diesel fuels" is key in determining the increased burden to primacy agencies.

Webinar Attendance

This webinar was attended by 344 public stakeholders representing private citizens, industry, environmental and other non-governmental organizations, federal agencies, academia, states, local governments, consulting and law firms, and utility companies.