



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Bruce Rauner, Governor
Wayne A. Rosenthal, Director

August 14, 2017

Woolsey Operating Company, LLC
125 North Market St. Ste. 1000
Wichita, KS 62702

Re: HVHHF Application for Woodrow #1H-310408-193 (Review #HVHHF-000001)
Sec. 31, T04S, R08E, White County, Illinois

Mr. Woolsey:

Please be advised that the Department has reviewed the amended application for HVHHF-000001 which was submitted to the Department on June 26, 2017. Based on the Department's review of your amended application, and for the reasons set forth in Attachment A, the amended application submitted to perform HVHHF operations on the above-referenced well cannot be issued as submitted as it does not meet the requirements of the HFRA and associated rules and regulations.

Also, please be advised that the Department has reviewed the public comments which were submitted during the first public comment period. 62 Ill. Adm. Code 245.260(e) states as follows:

The Department may request that the applicant respond to any substantive public comments, objections and recommendations obtained during the public comment periods (Section 1-45(d) of the Act).

Based on the Department's review of the public comments and the amended application for HVHHF-000001, and for the reasons set forth in Attachment B, the Department requests that you provide additional information in support of your application submission.

This letter should be considered a deficiency letter under Section 1-35(j) of the HFRA and 62 Ill. Adm. Code 245.230(b). Review of your application cannot be completed until all of the items noted in Attachments A and B have been submitted or are otherwise resolved. Also, be advised that the Department:

"...shall have no more than 60 calendar days from the date it receives the permit application to approve, with any conditions the Department may find necessary, or reject

the application for the high volume horizontal hydraulic fracturing permit. The applicant may waive, in writing, the 60-day deadline upon its own initiative or in response to a request by the Department.” 225 ILCS 732/1-35(i), 62 Ill. Adm. Code 240.300(a).

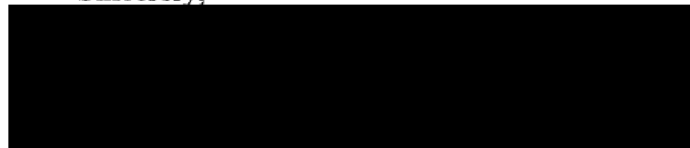
On June 26, 2017, your company granted the Department an extension which ends on August 31, 2017. In order for the Department to complete its review prior to August 31st, please submit a response to the deficiencies listed in Attachments A and B by the close of business on August 24, 2017. Failure to respond to this letter in a timely manner may result in your application being rejected or denied at the end of the review period as set forth in 225 ILCS 732/1-35(j), 1-60(a) and 62 Ill. Adm. Code 245.300 and 245.310(a).

In order for the Department to complete review of your HVHHF permit application, you have 2 options:

- 1) By the close of business on August 24, 2017, provide a formal response to this letter, in writing, addressing all items in their entirety, or request an extension of time which will still allow the Department to complete the required review of the new information by August 31, 2017; or
- 2) If you cannot provide a complete response which the Department can fully review by August 31, 2017, extend, in writing, the August 31, 2017 deadline to provide the Department more time to complete the review of your HVHHF permit application.

Please submit all responses and questions to Doug Shutt via mail or email at the contact information below, including the review number assigned to your permit application: **HVHHF-000001**.

Sincerely,



Doug Shutt
Permit Manager
Office of Oil and Gas Resource Management
One Natural Resources Way
Springfield, Illinois 62702
217-782-7756
Doug.Shutt@illinois.gov

Attachment A - 2 pages
Attachment B - 3 pages

ATTACHMENT A TO AUGUST 14, 2017 DEFICIENCY LETTER FOR HVHHF-000001

The following deficiencies were noted during the review of your application:

1. Hydraulic Fracturing Fluids and Flowback Plan

According to 62 IAC Section 245.210(a)(11), Hydraulic Fracturing Fluids and Flowback Plan, the following items shall be addressed:

- A) A hydraulic fracturing fluids and flowback plan for the handling, storage, transportation, and disposal, recycling, or reuse of hydraulic fracturing fluids and hydraulic fracturing flowback consistent with the requirements of Subpart H. The plan shall identify the specific Class II injection well or wells that will be used to dispose of the hydraulic fracturing flowback or the facilities where the hydraulic fracturing flowback will be reused or recycled. The plan shall describe the capacity of the tanks to be used for the capture and storage of flowback and of the lined reserve pit to be used, if necessary, to temporarily store any flowback in excess of the capacity of the tanks. Identification of the Class II injection well or wells shall be by name, identification number, and specific location and shall include the date of the most recent mechanical integrity test for each Class II injection well (Section 1-35(b)(11) of the Act) and
- B) Additional Information. Pursuant to Section 1-35(b)(20) of the Act, the applicant shall also describe the anticipated hydraulic fracturing flowback, the expected flowback rate and amount, and the frequency at which the storage tanks will be emptied.

Application Deficiencies

- a) *245.210(a)(11)(A) requests a hydraulic fracturing fluids and flowback plan for the handling, storage, transportation, and disposal, recycling, or reuse of hydraulic fracturing fluids and hydraulic fracturing flowback consistent with the requirements of Subpart H. Specifically, the plan as presented fails to address the handling, storage, transportation, and disposal, recycling, or reuse of the hydraulic fracturing fluids. Note the plan does not discuss hydraulic fracturing fluids prior to flowback”.*
- b) *245.210(a)(11)(B) requests the applicant describe the anticipated hydraulic fracturing flowback, the expected flowback rate and amount, and the frequency at which the storage tanks will be emptied. The application describes the expected flowback rate and amount, and the frequency at which the storage tanks will be emptied, however it does not include an explanation as to why the anticipated flowback that will be recovered is only between 4,000 and 5,000 barrels. Please provide a narrative and calculations as needed to justify the anticipated flowback.*

To resolve submit a revised Hydraulic Fracturing Fluids and Flowback Plan including the following:

- A) A narrative address the handling, storage, transportation, and disposal, recycling, or reuse of hydraulic fracturing fluids.
- B) A narrative and calculations as needed to justify the anticipated flowback including an explanation as to why this amount is small in comparison to the total quantity used for the stimulation.

2. Containment Plan

According to 62 IAC Section 245.210(a)(13), Containment Plan, the following items shall be addressed: A containment plan describing the containment practices and equipment to be used and the area of the well site where containment systems will be employed (Section 1-35(b)(13) of the Act) to be compliant with Sections 245.820, 245.825 and 245.830.

245.825 requires that hydraulic fracturing additives, hydraulic fracturing fluid, hydraulic fracturing flowback, and produced water shall be stored in above-ground tanks pursuant to the requirements of this Section at all times until removed for proper disposal or recycling.

Application Deficiencies

- a) 245.825(a)(1-5) require specific requirements for each type of tank (hydraulic fracturing additives, hydraulic fracturing fluid, hydraulic fracturing flowback, and produced water). The application did not identify each of these types of tanks as meeting the requirements of 245.825. Specifically, the sentence "Tanks containing constituent chemicals used in the hydraulic fracturing fluid are provide by the chemical manufacturer and meet..." need to be revised/completed addressing the requirements of 245.825(a)(1-5).

To resolve submit a revised Containment Plan including the following:

- A) Statements identifying the various types of tanks (hydraulic fracturing additives, hydraulic fracturing fluid, hydraulic fracturing flowback, and produced water) and addressing the compliance of each with the requirements of 245.825 and 245.210(a)(13).

3. Traffic Management Plan

According to 62 IAC Section 245.210(a)(15), Traffic Management Plan, the following items shall be addressed:

- A) A traffic management plan that is developed by the applicant, identifying the impacted highway authorities (county, township, road district system, and municipal street system, as applicable), to identify the anticipated roads, streets, and highways that will be used (Section 1-35(b)(15) of the Act) to facilitate the well site construction, drilling operations, HVVHF operations, production, and continued operations of the well site. The applicant shall include contact information for the applicant's representative with knowledge of the traffic management plan and contact information for a representative of each impacted highway authority. The applicant shall submit copies of the traffic management plan to the impacted highway authority, when the applicant submits the application to the Department, to provide the highway authority time to submit comments to the Department, if desired.

Application Deficiencies

- a) 245.210(a)(15)(A), requires a traffic management plan that is developed by the applicant, identifying the impacted highway authorities (county, township, road district system, and municipal street system, as applicable), to identify the anticipated roads, streets, and highways that will be used (Section 1-35(b)(15) of the Act) to facilitate the well site construction, drilling operations, HVVHF operations, production, and continued operations of the well site. Specifically, the plan as presented fails to address traffic management during production, and continued operations of the well site.

To resolve submit a revised Traffic Management Plan including the following:

- A) Incorporate a narrative address traffic management during production, and continued operations of the well site

ATTACHMENT B TO August 14, 2017 DEFICIENCY LETTER FOR HVVHF-000001

The following information is requested in response to issues brought up during the initial public comment period:

1. Underground Fresh Water Information

According to 62 IAC Section 245.210(a)(5), Underground Fresh Water Information, the application shall include the estimated depth and elevation, according to the most recent publication of the Illinois State Geological Survey of Groundwater for the location of the well or any other relevant information known to the applicant, of the lowest potential fresh water along the entire length of the proposed well (Section 1-35(b)(5) of the Act).

Issue:

- a) Applicant's Underground Fresh Water Information does not explain whether the estimated depth and elevation of the lowest potential fresh water along the entire length of the proposed well is based on the most recent publication of the Illinois State Geological Survey of Groundwater or other relevant information.*

To resolve, submit a revised HVVHF Underground Fresh Water Information including the following:

- A) Provide an explanation of the source of the estimated depth and elevation of fresh water information used to complete the application.

2. HVVHF Operations Plan

According to 62 IAC Section 245.210(a)(6), High Volume Horizontal Hydraulic Fracturing Operations Plan, shall include a detailed description of the proposed high volume horizontal hydraulic fracturing operations, including, but not limited to, the following (Section 1-35(b)(6) of the Act):

- A) the formations affected by the high volume horizontal hydraulic fracturing operations, including, but not limited to, geologic name and geologic description of the formations that will be stimulated by the operation (Section 1-35(b)(6)(A) of the Act), and a description of the confining zone and the formations constituting or contributing to that zone, including, but not limited to, a description of the lithology, extent, thickness, permeability, porosity, transmissive faults, fractures, water or water source content, and susceptibility to vertical propagation of fractures, of the confining formations; if any of the features of the confining zone and overburden described in this subsection (a)(6)(A) are unknown, the applicant should so state;
- B) the anticipated surface treating pressure range (Section 1-35(b)(6)(B) of the Act);
- C) the maximum anticipated injection treating pressure (Section 1-35(b)(6)(C) of the Act);
- D) the estimated or calculated fracture pressure of the producing and confining zones (Section 1-35(b)(6)(D) of the Act);
- E) the planned depth of all proposed perforations or depth to the top of the open hole section (Section 1-35(b)(6)(E) of the Act); and
- F) the anticipated type, source and volume of the base fluid anticipated to be used in the high volume horizontal hydraulic fracturing treatment.

Issue

- b) Specifically, 245.210(a)(6)(A) requests a description of the confining zone and the formations constituting or contributing to that zone, including transmissive faults and fractures. The*

application states, "In regard to transmissive faults and large through-going fractures, it can be stated that according to a 3-D seismic survey collected over the proposed location/prospect area, there are none that exist anywhere near the proposed wellbore, and specifically that part of the well bore that will be in the reservoir zone, the New Albany Shale (herein referenced as 'NAS')." The application does not include the results of the 3-D seismic survey or any other evidence upon which the Department can verify that there are no transmissive faults or fractures over the proposed location/prospect area.

To resolve, submit a revised HVHHF Operations Plan including the following:

- A) The results of the 3-D seismic survey or other evidence supporting the contention that there are no transmissive faults or fractures over the proposed location/prospect area.

3. Water Source Management Plan

According to 62 IAC Section 245.210(a)(10), Water Source Management Plan, if fresh water is anticipated to be used in the HVHHF treatment, the following items shall be addressed:

- A) the name and location (county, latitude, longitude) of the source of the fresh water, such as surface or groundwater, anticipated to be used for water withdrawals, and the anticipated withdrawal location (Section 1-35(b)(10)(A) of the Act);
- B) the anticipated volume and rate of each fresh water withdrawal from each withdrawal location (Section 1-35(b)(10)(B) of the Act);
- C) the anticipated months when fresh water withdrawals shall be made from each withdrawal location (Section 1-35(b)(10)(C) of the Act);
- D) the methods to be used to minimize fresh water withdrawals as much as feasible (Section 1-35(b)(10)(D) of the Act); and
- E) the methods to be used for surface water withdrawals to minimize adverse impact to aquatic life (Section 1-35(b)(10)(E) of the Act).

Issue

- a) *Specifically, 245.210(a)(10)(A)(iv) requests that if fresh water is to be used as part of the HVHHF treatment, the application shall include the methods to be used to minimize fresh water withdrawals as much as feasible. Section (d) of the Water Source Management Plan states that overall 7,500,000 gallons of fresh water will be required to perform the HVHHF treatment. Section (g) of the Water Source Management Plan does not address why 7,500,000 gallons is the least amount of water feasible to perform the HVHHF treatment. Section (g) also does not address whether the use of recycled water was contemplated by the applicant and/or why the use of recycled water is not feasible to offset the amount of fresh water required to perform the HVHHF treatment.*

To resolve submit a revised Water Source Management Plan including the following:

- A) An explanation of why 7,500,000 gallons of water is required and is the least amount feasible to perform the HVHHF treatment.
- b) An explanation of whether recycled water was contemplated for use during the HVHHF treatment and why the use of recycled water is not feasible.

4. Topsoil Preservation

According to 62 IAC Section 245.210(b)(2), topsoil preservation, shall include the following;

A strategy for compliance with the requirement to preserve topsoil as required by Section 245.410:

245.410(d) Unless otherwise approved or directed by the Department, all topsoil and subsoil stripped to facilitate the construction of the well pad, well site, and access roads must be stockpiled, stabilized to prevent erosion, and remain on site. Topsoil is the uppermost layer of soil with the darkest color or the highest content of organic matter. The topsoil shall be segregated from the subsoil. All soils shall remain on site for use in either partial or final restoration and reclamation pursuant to Subpart J. In the event it is anticipated that the final reclamation shall take place in excess of one year from drilling the well, the topsoil may be disposed of in any lawful manner provided the permittee reclaims the site with topsoil of similar characteristics of the topsoil removed. (Section 1-70(b)(2) of the Act).

Issue

a) Specifically, 245.410(d) requires that unless otherwise approved or directed by the Department, all topsoil and subsoil stripped to facilitate the construction of the well pad, well site, and access roads must be stockpiled, stabilized to prevent erosion, and remain on site. Topsoil is the uppermost layer of soil with the darkest color or the highest content of organic matter. The topsoil shall be segregated from the subsoil. All soils shall remain on site for use in either partial or final restoration and reclamation pursuant to Subpart J. In the event it is anticipated that the final reclamation shall take place in excess of one year from drilling the well, the topsoil may be disposed of in any lawful manner provided the permittee reclaims the site with topsoil of similar characteristics of the topsoil removed. (Section 1-70(b)(2) of the Act). The application uses the term "construction" but does not differentiate whether that refers to construction of the well pad, well site and/or access roads. This use of "construction" is vague. From the current Topsoil Preservation plan it is difficult to determine how the topsoil will be handled during the construction of the access roads as opposed to the well site and well pad.

To resolve submit a revised Topsoil Preservation form including the following:

- A) Separate explanations of how the topsoil will be managed during construction of the 1) well pad, 2) well site, and 3) access roads.

Please submit all responses and inquiries to Doug Shutt vial mail or email at the following address:

Doug Shutt
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