

FINAL

**RULE B-19 REQUIREMENTS FOR WELL COMPLETION UTILIZING
FRACTURE STIMULATION**

- a) Definitions
- 1) “ADEQ” means the Arkansas Department of Environmental Quality.
 - 2) “Additive” means any substance or combination of substances, including proppant, having a specified purpose that is combined with a Hydraulic Fracturing Fluid.
 - 3) “AOGC” means the Arkansas Oil and Gas Commission.
 - 4) “Chemical Abstract Service” or “CAS” means the chemical registry that is the authoritative collection of disclosed chemical substance information.
 - 5) “Chemical Constituent” means a discrete chemical with its own specific name or identity (such as, but not necessarily, a CAS number) that is contained in an additive.
 - 6) “Chemical Family” means a group of elements in the Periodic Table or, more commonly, compounds that share certain physical and chemical characteristics and have a common name.
 - 7) “Hydraulic Fracturing Fluid” means the base fluid type utilized in a particular Hydraulic Fracturing Treatment.
 - 8) “Hydraulic Fracturing Treatment” means stimulating a well by the application of Hydraulic Fracturing Fluids and Additives with force in order to create artificial fractures in the formation for the purpose of improving the capacity to produce hydrocarbons.
 - 9) “RCRA” means Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et. seq.
- b) The provisions of this Rule shall apply to all new wells for which an initial drilling permit is issued on or after the effective date of this Rule.
- c) Persons applying for a permit to drill shall indicate on the initial drilling application the intent to perform Hydraulic Fracturing Treatment operations and provide the information required in accordance with subparagraph d) below. If the intent to fracture stimulate a well was not provided at the time of the initial drilling application, a Permit Holder desiring to perform Hydraulic Fracturing Treatment operations shall send the information required in accordance with subparagraph d) below via e-mail, fax or mail to the AOGC office where the initial drilling permit was issued, prior to commencement of Hydraulic Fracturing Treatment operations.
- d) The application described in subparagraph c) above shall include:

- 1) The following information on the proposed casing program, demonstrating that the well will have steel alloy casing designed to withstand the anticipated maximum pressures to which the casing will be subjected in the well:
 - A) Whether the well will be a vertical well, a directional well, or a horizontal well; and
 - B) The estimated true vertical and measured production casing setting depths; and
 - C) The casing grade and minimum internal yield pressure for the production casing proposed to be used in the well.
 - 2) The following information demonstrating that the well will have sufficient cement volume and integrity to prohibit movement of fracture fluids up-hole into the various casing or well bore annuli:
 - A) The proposed cement formulation(s)' minimum compressive strength; and
 - B) The estimated top of cement for the production casing string.
 - 3) The anticipated surface treating pressure range for the proposed Hydraulic Fracturing Treatment program. The production casing described in subparagraph d) 1) above shall be sufficient to contain the maximum anticipated treating pressure of the Hydraulic Fracturing Treatment, which shall not exceed 80% of the minimum internal yield pressure for such production casing.
- e) Surface casing in the well in which the proposed Hydraulic Fracturing Treatment will occur shall be set, and cemented to the surface, to a depth in accordance with General Rule B-15, and have sufficient internal yield pressure to withstand the anticipated maximum pressures to which the casing will be subjected in the well. If during the drilling of the surface portion of the well, and prior to setting surface casing, a freshwater flow is encountered, or the Permit Holder gains knowledge that freshwater will be encountered, from a deeper zone than was specified on the permit to drill, surface casing shall be set and cemented at least one hundred (100) feet below the deepest encountered freshwater zone.
 - f) If during the setting and cementing of production and/or any intermediate casings the cement program does not occur as submitted in accordance with this Rule, and would cause a reasonably prudent Permit Holder to question the integrity of the cementing program with respect to isolating the zone of Hydraulic Fracturing Treatment from movement of fracture fluids up-hole into the various casing or well bore annuli, the Permit Holder shall immediately notify the Director, or his designee, in writing as soon as practicable, but not more than twenty-four (24) hours after the event. In reviewing the report, the Director, or his designee, may require a bond log or other cement evaluation tool to document cement integrity and require additional cementing operations or other appropriate well workover efforts necessary to correct any cement deficiencies prior to initiating any Hydraulic Fracturing Treatments in the well.
 - g) The Permit Holder shall monitor all casing annuli that would be diagnostic as to a potential loss of well bore integrity during the Hydraulic Fracturing Treatment. The Permit Holder

shall establish methods to timely relieve any excessive pressures to avoid the loss of surface casing integrity.

- h) The Permit Holder must provide written notice to the Director, or his designee, of (i) any change in surface casing annulus pressure that would indicate movement of fluids into the annulus, or (ii) a pressure that exceeds the rated minimum internal yield pressure on any casing string in communication with the Hydraulic Fracturing Treatment. This written notice shall be delivered as soon as possible after the event, but not more than twenty-four (24) hours after the event. Following notification and any request for additional information, the Director, or his designee, may request additional documentation or well tests to determine if the Hydraulic Fracturing Treatment potentially endangered any freshwater zones. The Director, or his designee, may require appropriate additional cementing operations, or other well workover efforts to correct any well failure. Pending completion of required operations or efforts, the Director, or his designee, may order the cessation of further Hydraulic Fracturing Treatment and/or other well operations. The Director shall report any such incident to the Commission at its next regularly scheduled hearing, and the Commission may take such further action as it deems necessary and appropriate under the circumstances.
- i) All non-exempt RCRA materials and fluids used on-site in the Hydraulic Fracturing Treatment shall be handled and stored in accordance with ADEQ requirements and any spills of these materials and fluids on-site or off-site shall be reported to ADEQ in accordance with applicable ADEQ requirements. All RCRA exempt materials and fluids used on-site in the Hydraulic Fracturing Treatment shall be contained in leak free tanks or other containment vessels. Any on-site spill of these materials or fluids shall be immediately contained, remediation efforts shall be commenced as soon as practical, and the incident shall be reported to the Director, or his designee, within twenty-four (24) hours.
- j) All Hydraulic Fracturing Treatment flow back fluids shall be handled, transported, stored, disposed, or recycled for re-use in accordance with the applicable provisions of General Rule B-17, General Rule E-3 and General Rule H-1, H-2 and H-3.
- k) Following completion of the Hydraulic Fracturing Treatment, the Permit Holder shall, for purposes of disclosure, report detailed information to the Director, or his designee, of the Hydraulic Fracturing Treatment in the manner customarily reported or presented to the Permit Holder, within the time period specified in General Rule B-5, as follows:
 - 1) The maximum pump pressure measured at the surface during each stage of the Hydraulic Fracturing Treatment; and
 - 2) The types and volumes of the Hydraulic Fracturing-Fluid and proppant used for each stage of the Hydraulic Fracturing Treatment; and
 - 3) The calculated fracture height as designed to be achieved during the Hydraulic Fracturing Treatment and the estimated TVD to the top of the fracture; and
 - 4) A list of all Additives used during the Hydraulic Fracturing Treatment specified by general type, such as acid, biocide, breaker, corrosion inhibitor, crosslinker, demulsifier, friction reducer, gel, iron control, oxygen scavenger, pH adjusting agent, scale inhibitor, proppant and surfactant; and

- 5) The names of all specific Additives for each Additive type, specified in subparagraph k) 4) above, utilized during the Hydraulic Fracturing Treatment and the actual rate or concentration for each such Additive expressed as pounds per thousand gallons or gallons per thousand gallons additionally, the Additives are to be expressed as a percent by volume of the total Hydraulic Fracturing Fluids and Additives; and
 - 6) The Permit Holder shall supply field service company tickets (excluding pricing) and reports regarding the Hydraulic Fracturing Treatment, as used in the normal course of business to satisfy some or all of the foregoing information requirements; and
 - 7) The Permit Holder shall supply all information received from the person performing the Hydraulic Fracturing Treatment specified in subparagraph l) 4) below.
 - 8) If the Permit Holder causes any Additives to be utilized during the Hydraulic Fracturing Treatment not otherwise disclosed by the person performing the Hydraulic Fracturing Treatment, the Permit Holder shall disclose a list of all Chemical Constituents and associated CAS numbers contained in all such Additives; provided, however, in those limited situations where the specific identity of any such Chemical Constituent and associated CAS number is entitled to be withheld as a trade secret under the criteria set forth in subsection (a)(2) of 42 U.S.C. § 11042, the Permit Holder shall (i) submit to the Director a claim of entitlement to have the identity of such Chemical Constituent withheld as a trade secret, and (ii) provide the Director with the Chemical Family associated with such Chemical Constituent. The identity of any Chemical Constituent that qualifies as a trade secret under the criteria set forth in subsection (a)(2) of 42 U.S.C. § 11042 shall be held confidential by the Director.
 - 9) Nothing in subparagraph k) 8) above shall authorize any person to withhold information which is required by state or federal law to be provided to a health care professional, a doctor, or a nurse. All information required by a health care professional, a doctor, or a nurse shall be supplied, immediately upon request, by the person performing the Hydraulic Fracturing Treatment, directly to the requesting health care professional, doctor, or nurse, including the percent by volume of the Chemical Constituents (and associated CAS numbers) of the total Hydraulic Fracturing Fluids and Additives.
- l) Any person performing Hydraulic Fracturing Treatments within the State of Arkansas shall:
- 1) Be authorized to do business in the State of Arkansas; and
 - 2) Be required to file Organization Reports in accordance with General Rule B-13, and include the length of time the entity has been in the business of performing Hydraulic Fracturing Treatments; and
 - 3) Disclose to the Director, or his designee, and maintain separate master lists of:
 - A) All Hydraulic Fracturing Fluids to be utilized during any Hydraulic Fracturing Treatment within the State of Arkansas; and
 - B) All Additives to be utilized during any Hydraulic Fracturing Treatment within the State of Arkansas; and

- C) All Chemical Constituents and associated CAS numbers to be utilized in any Hydraulic Fracturing Treatment within the State of Arkansas; provided, however, in those limited situations where the specific identity of any such Chemical Constituent and associated CAS number is entitled to be withheld as a trade secret under the criteria set forth in subsection (a)(2) of 42 U.S.C. § 11042, the person performing the Hydraulic Fracturing Treatment shall (i) submit to the Director a claim of entitlement to have the identity of such Chemical Constituent withheld as a trade secret, and (ii) provide the Director with the Chemical Family associated with such Chemical Constituent. The identity of any Chemical Constituent that qualifies as a trade secret under the criteria set forth in subsection (a)(2) of 42 U.S.C. § 11042 shall be held confidential by the Director; and
- 4) Provide to the Permit Holder for each well that such person performs a Hydraulic Fracturing Treatment, lists of:
 - A) The Hydraulic Fracturing Fluids utilized during the Hydraulic Fracturing Treatment; and
 - B) The Additives utilized during the Hydraulic Fracturing Treatment, and the actual rate or concentration for each such Additive utilized, expressed as pounds per thousand gallons or gallons per thousand gallons; additionally, the Additives are to be expressed as percent by volume of the total Hydraulic Fracturing Fluids and Additives, so that the Permit Holder may comply with its obligations under subparagraph k) above; and
 - C) All Chemical Constituents and associated CAS numbers utilized during the Hydraulic Fracturing Treatment; unless the specific identity of any such Chemical Constituent and associated CAS number is entitled to be withheld as a trade secret in accordance with subparagraph l) 3) c) above.
- 5) Nothing in subparagraphs l) 3) c) or l) 4) c) above shall authorize any person to withhold information which is required by state or federal law to be provided to a health care professional, a doctor, or a nurse. All information required by a health care professional, a doctor, or a nurse shall be supplied, immediately upon request, by the person performing the Hydraulic Fracturing Treatment, directly to the requesting health care professional, doctor, or nurse, including the percent by volume of the Chemical Constituents (and associated CAS numbers) of the total Hydraulic Fracturing Fluids and Additives.
- m) No Permit Holder shall utilize the services of another person to perform a Hydraulic Fracturing Treatment unless the person performing a Hydraulic Fracturing Treatment is in compliance with subparagraph l) above.