

BEFORE THE BOARD OF OIL AND GAS CONSERVATION AND
THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

In the matter of the amendment of) NOTICE OF AMENDMENT AND
ARM 36.22.307, 36.22.608,) REPEAL
36.22.1015, and 36.22.1016)
pertaining to fracturing of oil and gas)
wells, and the repeal of ARM)
36.22.1244 pertaining to the)
producer's certificate of compliance)

TO: All Concerned Persons

1. On August 24, 2018, the Department of Natural Resources and Conservation and the Board of Oil and Gas Conservation published MAR Notice No. 36-22-197 pertaining to the public hearing on the proposed amendment and repeal of the above-stated rules at page 1711 of the 2018 Montana Administrative Register, Issue Number 16.

2. The department has amended ARM 36.22.307, 36.22.608, 36.22.1015, and 36.22.1016 as proposed. The department has repealed ARM 36.22.1244 as proposed.

3. The department has thoroughly considered the comments and testimony received. A summary of the comments received, and the department's responses are as follows:

COMMENT 1: A commenter supported the amendment and repeal.

RESPONSE TO COMMENT 1: The board thanks the commenter for the comment.

COMMENT 2: Commenters requested that a minimum of 45-day disclosure of chemicals be used in hydraulic fracturing to provide the land or water well owner the opportunity to perform baseline testing.

RESPONSE TO COMMENT 2: The board thanks the commenters for the comment. During public listening sessions and meetings held by the board and its hydraulic fracturing subcommittee, experts in groundwater characterization and groundwater testing stated that changes in basic water chemistry would establish whether a water well had been impacted by oil and gas operations. The experts stated that a simple, inexpensive, basic baseline water test would establish whether there was an impact on water wells.

Testing for specific chemicals that might be used in hydraulic fracturing a nearby well would significantly increase testing costs. If a water well were impacted by any stage of oil and gas production, or by another activity not connected to oil and gas

production, the advance tested chemicals may or may not be present in subsequent tests, depending on the source of the chemicals. However, if a change in basic water chemistry is detected after hydraulic fracturing or another activity, additional directed testing can be performed to determine the specific source of the chemicals.

The board is concerned that the elevated cost of specific advance testing would deter the use of simple baseline testing. According to the experts, a basic water test can be done at any point prior to drilling or completion. Because the board's current disclosure requirements already require disclosure of chemicals used for hydraulic fracturing, the chemicals actually used in the stimulation would be available, should an adverse change in basic water chemistry be identified. Moreover, the experts also stated that significant background water chemistry data are available through numerous publicly available projects and studies. Any impact to water sources from drilling or completion activities could be identified through changes from the basic chemical analysis.

Some studies have documented impacts to ground water from oil and gas production, but these impacts were attributed either to practices that are no longer used or to activities other than hydraulic fracturing. The board knows of no cases of contaminated water wells related to hydraulic fracturing under Montana's regulations. In reviewing materials provided to the board during this rulemaking, and through the board's own research, the board found no documented case in which chemicals uniquely related to the hydraulic fracturing process were found in water wells. One event identified in the submitted literature (Beak et. al., 2015) involved a casing failure during hydraulic fracturing of a well located in North Dakota; chemicals related to hydraulic fracturing were found in monitor wells drilled after the failure. This incident occurred prior to the board's adoption in 2011 of hydraulic fracturing rules, which included engineering, operational, and environmental requirements to prevent a similar failure.

Two other technical papers alleged water well contamination from hydraulic fracturing operations. DiGiulio and Jackson, 2016, discussed sampling in Pavillion, Wyoming, performed by the United States Environmental Protection Agency. The Wyoming Department of Environmental Quality completed a subsequent study that concluded evidence was lacking for hydraulic fracturing being the cause of an impact to water-supply wells in the Pavillion area. See <http://deq.wyoming.gov/wqd/pavillion-investigation/resources/investigation-final-report/>.

Llewellyn et al., 2015, reported possible well contamination related to hydraulic fracturing in Pennsylvania. A later statement by the authors identified possible leakage of drilling fluids from offsetting wells or from other sources as the likely source of the contamination. See <https://www.energyindepth.org/major-research-gaps-in-new-groundwater-study/?154>.

In the absence of any evidence that a chemical unique to hydraulic fracturing has been found in a Montana water well, the advance disclosure of specific hydraulic

fracturing chemicals is unnecessary. The board believes that its current engineering, operational, and environmental requirements for drilling and hydraulic fracturing safeguard against water well contamination. The board also believes that current notice requirements provide ample time for water wells to undergo water chemistry testing prior to drilling or hydraulic fracturing activities. The chemical disclosure requirements already required by statute and rule protect a water well owner's ability to properly investigate any possible contamination.

COMMENT 3: Commenters noted that companies are only required to disclose chemicals 48 hours prior to hydraulic fracturing in the case of a wildcat or exploratory well.

RESPONSE TO COMMENT 3: The board thanks the commenters for the comment. Hydraulic fracturing with 48-hour notice to the board under ARM 36.22.608 occurs after required notice to nearby landowners, after approval of the application for permit to drill, and after the well was drilled. The purpose of the 48-hour notice is to confirm that well construction followed the approved construction plan, to apply additional stipulations or requirements that may be necessary, and to schedule an inspection during the time the hydraulic fracturing is to occur.

The decision to hydraulically fracture an exploratory well can only be made after the potential producing formation has been evaluated by drilling or testing. The characteristics of the targeted formation may be found to be different than expected, or the target geologic zone may be different from that originally targeted. The decision to hydraulically fracture is part of the ongoing process of evaluating and completing a well. It would not be practical to require a 45-day notice for each possible fracture stimulation when the work is being performed as a continuous well completion activity.

COMMENT 4: Commenters stated that baseline water well testing prior to hydraulic fracturing is necessary to protect water well owners and the oil and gas operator.

RESPONSE TO COMMENT 4: The board thanks the commenters for the comment. The board notes that many owners of domestic water wells test the water quality of their wells. The board also notes that various state and federal agencies have authority to investigate contamination of water. The board does not believe that additional, mandatory baseline testing would provide additional, meaningful protections to water owners or to oil and gas operators.

By statute, the board requires measures to prevent contamination from oil and gas activities, including requiring all pertinent engineering, operational, and environmental information to be available at the time an application for permit to drill is under review. The involvement of the land or water well owners can play an important role in the prevention of contamination. Notice requirements have been established to inform landowners of planned activity so they can communicate their concerns to the operator or to the board's staff. Should these concerns not be

adequately addressed during the permit review process, the application for permit to drill can be referred to the board for notice and hearing.

The identification of water wells within one-half mile of a proposed location must be provided by the operator as part of the application for permit to drill. Water well locations and depths to aquifers are independently confirmed by the board's staff during permit and environmental review. Potential contamination pathways are dependent upon the geologic setting of the well. Drilling permits and hydraulic fracturing proposals are evaluated to assure protection for existing water wells and other aquifers at the proposed well location. Additional construction requirements or operational stipulations are applied as necessary.

COMMENT 5: Commenters asked that the drilling of all oil and gas wells, not just wells subject to hydraulic fracturing, require mandatory water well testing prior to drilling, as in neighboring states, if the 45-day chemical disclosure prior to hydraulic fracturing is not adopted.

RESPONSE TO COMMENT 5: The board thanks the commenters for the comment. The request in this comment exceeds the scope of the current rulemaking, which is limited to hydraulic fracturing. The board knows of no state that requires testing for specific chemicals proposed for use in hydraulic fracturing prior to drilling.

COMMENT 6: Commenters requested that the rules include notice to adjacent landowners so they can sample their water in advance of hydraulic fracturing activities.

RESPONSE TO COMMENT 6: The board thanks the commenters for the comment. Existing rules and statutes require notice to the surface owner of the proposed well, published notice in a Helena newspaper and a newspaper of general circulation in the county where drilling is to occur if the well is not located in a previously delineated oil or gas field, and direct notice to the owners of occupied structures within one-quarter mile of the well. The board believes that individuals directly impacted by drilling activities will receive notice through one or more of the existing notice requirements. This notice protects the ability of those individuals to sample and test water in advance of hydraulic fracturing activities.

COMMENT 7: Commenters supported the proposed rules and stated that current drilling notice requirements and surface activities taking place before a well is hydraulically fractured provided sufficient opportunity for water well testing.

RESPONSE TO COMMENT 7: The board thanks the commenters for the comment.

COMMENT 8: Commenters requested that the methodology of trade secret verification be made public.

RESPONSE TO COMMENT 8: The board thanks the commenters for the comment. The requirements for evaluating confidentiality requests for the chemical

composition of components of a fracturing fluid are established in 82-10-604, MCA, and are summarized as guidelines, which are available on the board's website.

COMMENT 9: Some commenters requested that the administrator be required to release a chemical list to medical professionals in response to an emergency. Other commenters requested full chemical disclosure in the event of a transportation or occupational accident.

RESPONSE TO COMMENT 9: The board thanks the commenters for the comment. Timely release of chemical information in an emergency is addressed in ARM 36.22.1016. That rule requires compliance with state and federal laws for chemical disclosure, including for emergency purposes. Unless required by a state or federal law, the administrator may not disclose trade secret information.

COMMENT 10: Commenters requested that full chemical disclosure to the public be required with no allowance for consideration of a trade secret.

RESPONSE TO COMMENT 10: The board thanks the commenters for the comment. Trade secret protections are established in both federal and state law and are required under 82-10-601, MCA, et seq.

/s/ Robert Stutz
ROBERT STUTZ
Rule Reviewer

/s/ Ronald S. Efta
RONALD S. EFTA
Chair
Board of Oil and Gas Conservation

Certified to the Secretary of State October 23, 2018.