

INSIGHTS

## Ohio Issues Emergency Rules on Underground Injection Control Activities, Effective Immediately

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By: [Jason B. Hutt](#)

Companies that own and operate Class II disposal wells in Ohio will now have to comply with tougher standards when using deep injection wells for the underground disposal of brine and other wastes, a regulatory change spurred by findings that an injection well in Youngstown may have caused a series of earthquakes in 2011. On July 10, 2012, Governor John Kasich signed Executive Order 2012-09K, ordering that two draft Underground Injection Control rules become effective immediately as "emergency rules." The executive order allows the Ohio Division of Oil and Gas Resources Management (DRM) to immediately amend applicable state regulations and enforce the new rules, avoiding the typical administrative process of soliciting stakeholder input. Executive Order 2012-09K provides that Rules 1501:9-3-06 and 1501:9-3-07 are to be immediately amended in order to:

1. Outline the tests that an applicant must satisfy in order to obtain a permit to drill and operate an underground injection control well.
2. State clearly that the chief of the DRM may withhold authority to inject fluids if the results of required tests are negative.
3. Allow the chief to set a graduated maximum allowable injection pressure based upon data obtained throughout the permitting process.
4. Allow the chief to require the installation of an automatic shut-off device if the permitted maximum allowable injection pressure is exceeded.
5. Require continuous monitoring of the annulus between the casing and tubing in a well.

**What the Rules Require** Under the emergency rules, DRM may require any combination of the following tests or evaluations of a proposed brine injection well:

- Pressure fall-off testing;

- Geological investigation of potential faulting within the immediate vicinity of the proposed injection well location, which may include seismic surveys or other methods determined by the chief to assist in identifying potential faulting within the immediate vicinity of the proposed injection well;
- Submittal of a plan for monitoring seismic activity;
- Testing and recording the original bottomhole injection interval pressure;
- Gamma ray, compensated density-neutron, and resistivity geophysical logging suite on all newly drilled injection wells. All geophysical logs shall be submitted to the division within sixty days of completion of well drilling;
- Radioactive tracer or spinner survey; and
- Any such other tests that the chief deems necessary.

The applicant is required to refrain from injecting any fluid into the injection well until the DRM has evaluated the results of any tests performed. The emergency rules provide that DRM shall have the right to withhold authority to inject fluids based upon the results of the tests performed, and may order the plugging of the well if deemed necessary. Wells permitted after the effective date of the emergency rules must install a continuous pressure monitoring system, with results being electronically available to DRM for review. Additionally, well owners must install an automatic shut-off system set to terminate injection operations if the permitted maximum allowable surface injection pressure on the injection pump is exceeded. DRM may also implement graduated maximum allowable injection pressure requirements based upon data provided in the permitting process and any applicable testing requirements. **Another Fracking Misconception** Despite some media reports, induced seismic events have never been linked to well stimulation operations, such as hydraulic fracturing. Instead, the alleged incidents of induced seismicity in Arkansas and Ohio were associated with the disposal of wastewater via underground injection wells. In early 2012, the Ohio Department of Natural Resources (ODNR) halted operations at the Northstar 1 Class II injection well in Youngstown following a series of 12 low-magnitude seismic events throughout 2011, culminating in a 4.0 magnitude event on January 1, 2012. The Youngstown moratorium affected five total wells and currently remains in place. Despite the emergency order and Ohio's rush to promulgate new rules, induced seismic events are rare. ODNR noted in its report on the Northstar 1 well that "[g]eologists believe it is very difficult for all conditions to be met to induce seismic events. In fact, all the evidence indicates that properly located Class II injection wells will not cause earthquakes." ODNR's report concludes that to induce an earthquake a number of circumstances must be met, including:

- A fault must already exist within the crystalline basement rock;
- That fault must already be in a near-failure state of stress;
- An injection well must be drilled deep enough and near enough to the fault and have a path of communication to the fault; and
- The injection well must inject a sufficient quantity of fluids at a high enough pressure and for an adequate period of time to cause failure, or movement, along that fault (or system of faults).

With specific regard to the Northstar 1 well, ODNR concluded that it was a series of coincidental circumstances, including an unmapped fault in a near-failure state of stress, which made a "compelling argument" that the seismic events in Youngstown were induced. Under Ohio state law, rules filed as emergency rules remain in effect for 90 days. Over that 90 day period, ODNR will proceed through the typical rule-filing procedure. ODNR will hold a public hearing on the rules Wednesday, August 15, 2012 at 9 a.m. at the Ohio Department of Commerce, East Building; 6606 Tussing Road; Training Room No. 3; Reynoldsburg, Ohio 43068.