

TECHNICAL INTERPRETATION OF THE TRANSITION OF CO₂ EOR TO GEOLOGIC STORAGE

Wesley D. Peck, Charles D. Gorecki, Edward N. Steadman, Thomas E. Doll, and John A. Harju

Energy & Environmental Research Center
University of North Dakota
15 North 23rd Street, Stop 9018
Grand Forks, ND 58202-9018

ABSTRACT

In December of 2013, the U.S. Environmental Protection Agency (EPA) introduced its draft Underground Injection Control (UIC) Program guidance document on transitioning Class II wells to Class VI. In that document, EPA suggests that it will determine when an oil field operator has completed a carbon dioxide (CO₂) enhanced oil recovery (EOR) project and has moved into the realm of geologic storage. This perceived change or transition would likely force the oil field operator to upgrade its existing permits to a more onerous level, even if the operator does not change its primary business purpose of producing oil. Among the factors introduced by EPA that may trigger a conversion to a Class VI well are increased reservoir pressure, increased CO₂ injection rates, a decrease in reservoir production rates, and the distance between injection zone and underground sources of drinking water. Input from existing literature indicates that the current EPA perspective on the transition between EOR and geologic storage is problematic. This presentation will bring together multiple lines of technical evidence garnered from peer-reviewed literature along with new analytical summaries of numerous existing CO₂ EOR projects with the goal of clarifying the issue concerning the perceived point at which an EOR project transitions to a CO₂ storage project.