

DOE sequestration test nears milestone

Katie Howell, Environment & Energy Publishing, 4-8-10

A large-scale Energy Department-sponsored carbon dioxide sequestration project in Mississippi is set to reach a major new milestone this month.

The CO₂-injection project at the Cranfield oil-field site near Natchez, Miss., will reach an injection rate of more than 2 million metric tons a year, said Susan Hovorka, a senior research scientist at the Texas Bureau of Economic Geology at the University of Texas. She spoke today at a Washington, D.C., briefing.

Last summer, the Cranfield project became the first in the United States and the fifth in the world to pass the 1-million-ton mark.

"The hypothesis we're working with is the CO₂ will be retained in a known zone, we can document no leakage to air, no damage to water," Hovorka said. "We think we can do this. Now bring it on. Can we really do this?"

The Mississippi project is an effort to combine CO₂ injection with enhanced oil recovery. The project is part of the Southeast Regional Carbon Sequestration Partnership, one of seven public-private partnerships aiming to scale up carbon capture and sequestration (CCS) technology.

Texas-based Denbury Resources Inc. is pumping naturally occurring CO₂ from nearby Jackson Dome into the Tuscaloosa sandstone formation. The Texas Bureau of Economic Geology is monitoring the injection for CO₂ escapes. Denbury was already pumping CO₂ into the ground at the site to boost production at the aging oil field.

"They're relatively young sandstones. That means the CO₂ will go in," Hovorka said. "And they have shale seals, which means they won't go out."

Injection will continue through next summer, Hovorka said, and could reach an injection rate of several million tons a year.

"Denbury's going to keep going up. It will just go up and up," she said.

Plant Barry to start CO₂ capture next year

The Southeast regional partnership's flagship project is set to start capturing CO₂ in April 2011, said Gerald Hill, the partnership's technical coordinator and a representative of the Southern States Energy Board.

The project will capture 150,000 tons of CO₂ annually from Southern Co.'s Plant Barry, a coal-fired power plant in Alabama, and inject it into a nearby saline aquifer.

The project will use advanced amine capture technology developed by Mitsubishi Heavy Industries, Hill said. The private CCS test at American Electric Power's Mountaineer coal-fired power plant in West Virginia uses a chilled ammonia technology to capture CO₂.