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West Texas carbon capture project could help the climate, but some worry about potential local environmental risks

By: Mitch Borden

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Outside of Odessa, a Texas-based oil company is building a facility to pull carbon dioxide out of the air and then store it underground.

Occidental Petroleum has claimed its Permian Basin carbon capture facility is a practical way to cut emissions like CO2 that are driving climate change. Despite the promise of the technology to help fight climate change, some in West Texas are worried about its potential environmental consequences.

At a summer presentation in Odessa about Occidental's Stratos carbon capture facility, Sarah Stogner looked at a map of where the oil company wants to inject carbon dioxide into the ground.

"There are wells out here that even God doesn't even know about," she said. "No one's ever looked at the shallow geology like they've looked at the deeper geology and there's faults."

Stogner is an outspoken advocate for local landowners whose work has focused on

identifying and trying to get leaking oil and gas wells plugged. She worries the carbon dioxide Occidental plans to inject underground could find a path to escape through nearby wells. Stogner was also recently elected as the next District Attorney for the 143rd Judicial District, which covers a large swath of the Permian Basin.

Occidental, or Oxy, wants to pull CO2 from the atmosphere at its new carbon capture facility and permanently store up to 722,000 metric tons of the gas deep underground annually – a process known as carbon sequestration.

Before that can happen, the company has to get a first-of-its-kind permit in Texas from the Environmental Protection Agency to drill what are called Class VI wells, which is the formal name for wells that pump carbon dioxide into the ground for long term storage.

Stogner believes there could be unplugged and forgotten wells near where Oxy is building its carbon capture facility and where it plans to drill CO2 injection wells.

“Looking at the location where they’re talking about, it’s at the edge of development,” she said. “That is the worst place for unknown wells. It’s a disaster waiting to happen.”

Three old oil and gas wells have been found near where the company plans to inject CO2. An EPA spokesperson said those wells will have to be replugged before the project can move forward.

Commission Shift Executive Direction Virginia Palacios is also concerned. Her group is dedicated to improving how the state regulates oil and gas. She argues Oxy’s proposal will only add to recent problems in the West Texas oilfield.

“We have been seeing geyser-like blowouts in the Permian. We are seeing a lot of leaks from unplugged wells across the basin,” she said. “I’m very worried that if this Ector County class VI injection permit is approved we’re going to see even more problems.”

Earthquakes, brine water shooting out of old wells and other leaks are issues that have been linked to the oil and gas industry injecting wastewater underground. Palacios said injecting CO2 underground could cause similar problems and it’s important the EPA take these issues seriously while deciding whether or not to grant Oxy’s permit to drill Class VI wells.

The EPA permitting process is managed under the Safe Water Drinking Act. The process is aimed at protecting groundwater and ensuring the injected greenhouse gas doesn’t cause problems in the future.

“This is going to be the blueprint for all the permits going forward that happen anywhere else in the state,” Palacios said. “So we need to be really intentional about preventing groundwater contamination to the best of our ability with this highly experimental technology”

Carbon dioxide has been injected into the ground in West Texas since the 1970s to help with oil and gas production. In a statement, Occidental Petroleum spokesperson William Fitzgerald said the company has “over 50 years of expertise in safely and securely storing large volumes of CO2 in West Texas.”

Oxy will be required by the EPA to monitor a number of factors around its proposed injection wells if its permit is approved, including assessments of subsurface pressure, groundwater quality and the integrity of the wells.

Critics of carbon capture say it isn't actually effective at cutting greenhouse emissions and could be used by companies to prolong the use of fossil fuels instead of transitioning to cleaner forms of energy.

"I find the benefits to far outweigh the risk," said Tip Meckel, a researcher who studies carbon sequestration at the University of Texas' Bureau of Economic Geology.

Meckel said while he understands the concerns, this facility and others like it will play an important role in fighting climate change.

"That facility that will be pulling CO2 out of the atmosphere is a model for the next 100 years of successfully reducing emissions," he said. "The less CO2 in the atmosphere, the better it is for the stability of the climate."

Even if Oxy's bid to drill CO2 injection wells is denied, Meckel said, the technology will have a future in Texas. The EPA is currently evaluating 15 similar carbon sequestration projects that would be located in the Lone Star State.

"There will be a Class VI well permitted in Texas in the near future," he said. "It's too important to not move forward and try."

The EPA is in the final stages of considering Oxy's application and is expected to make a decision in the new year. The company is aiming to begin operating its Stratos facility in 2025.