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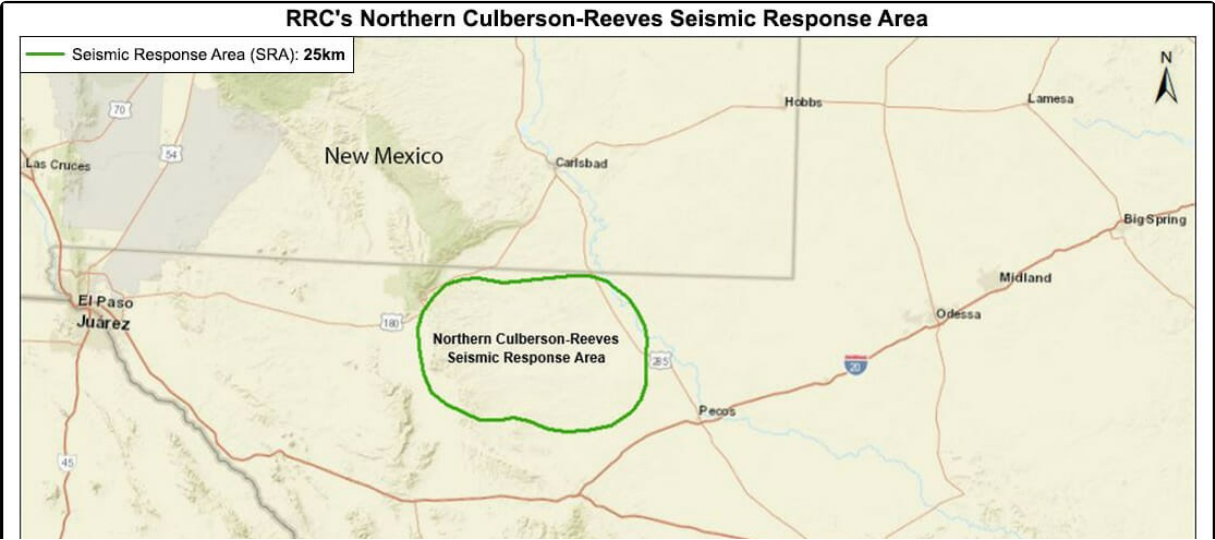
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Texas RRC Aiming to Curb Permian Quakes with Produced Water Plan

 BY **MATTHEW VEAZEY**
March 10, 2022

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The Railroad Commission of Texas (RRC) recently launched an oil and natural gas operator-led response plan in West Texas that targets seismicity from produced water injection wells in the Permian Basin.



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The Northern Culberson-Reeves Seismic Response Area (SRA) plan is designed to reduce the intensity and frequency of injection-induced earthquakes. The goal is to eliminate 3.5-plus magnitude earthquakes by the end of 2023.

A series of earthquakes prompted the RRC in December to **suspend disposal injections in the Gardendale SRA** in the Permian's Midland sub-basin.

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"Industry asked RRC to allow them to come up with a plan to address the issue," said RRC's Sean Avitt, Injection-Storage Permits Unit manager.

The response plan for the Northern Culberson SRA, east of Guadalupe Mountains National Park and south of the New Mexico border, would impact 57 shallow saltwater disposal wells above the top of the Wolfcamp formation and 31 deep disposal wells below the bottom of the Wolfcamp, noted RRC.



State regulators said shallow wells tend to be less than 7,000 feet in depth, while the deeper wells range from 11,000-16,000 feet. A **recent Rystad Energy study** concluded that exploration and production companies in West Texas and elsewhere in the Lower 48 face shrinking produced water disposal options.

The Northern Culberson-Reeves plan could reduce produced water

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depths.

Limiting Disposal Volumes

For shallow disposal wells within 2.8 miles of a 3.5-plus magnitude quake, the Northern Culberson SRA response plan would by September limit water injection volumes to 10,000 barrels of water a day, stated RRC.

The daily injection limit could be upped to 15,000 barrels a day if “the operator adds a seismic monitoring station strategically placed on the property” for the University of Texas at Austin’s TexNet Seismic Monitoring Program to access. The **Texas Legislature created TexNet** to locate and determine the origins of state earthquakes.

RRC also said that shallow Northern Culberson-Reeves disposal wells within 2.8-5.6 miles of a 3.5-plus quake would be able to inject up to 20,000 barrels of water a day – or up to 30,000 barrels a day with a seismic monitoring station. For undrilled or uncompleted shallow wells within the 5.6-mile zone in the SRA, RRC would require 30 days’ notice before drilling or completion operations could start.

In the case of deep disposal wells in Northern Culberson-Reeves, RRC said that operators with multiple wells in the SRA would reduce injection volumes by 50% by the end of June 2023, but could spread the reduction across wells.

Operators with only one well in the SRA would be allowed disposal volumes up to 15,000 barrels of water a day by the 2023 deadline.

An RRC-supplied spreadsheet viewed by NGI showed that 36 of 89 active wells completed for injection are permitted for disposal volumes of

10,000 barrels of water a day or less.

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shallow disposal,” stated RRC.

Avitt said the RRC “provided extensive feedback” to ensure the **industry-developed plan** met agency goals.

“Industry was able to produce a plan leveraging what they know about the area and their injection operations there,” he said. “However, we made it clear if circumstances change, the commission may have to take further actions to reduce seismicity.”

RRC spokesperson Andrew Keese confirmed to NGI that the plan is voluntary. He said “operators will report daily injection data at the end of each month, which will be monitored by RRC staff.

“If a disposal well exceeds voluntary limits, RRC may take additional actions, which can include to suspend, modify, or terminate permits, as needed, to address seismic activity,” he said.

The Texas Oil and Gas Association (TXOGA) applauded the RRC and the state’s oil and gas industry for the collaboration.

“Oil and natural gas operators actively use proven technology to improve all aspects of operations through practices such as pre-completion risk assessment, proper monitoring, and mitigation protocols,” said TXOGA President Todd Staples. He said the industry would continue to work with RRC, TexNet and others “to collect, monitor, and share information to develop industry practices and protocols to reduce seismic activity in this area and across the Permian.”

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ISSN © 2577-9877 | ISSN © 1532-1266 | ISSN © 2158-8023

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DT Midstream Joins Growing Endeavor to Tackle Emissions Across Natural Gas Industry

Natural gas pipeline and storage provider DT Midstream Inc. (DTM), with a portfolio that includes 900 miles of regulated interstate pipelines, said Wednesday it would join a rapidly growing project aimed at better understanding the energy industry's role in greenhouse gas (GHG) emissions. A day later, Houston-based Kinder Morgan Inc. (KMI), one of the largest...

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