



BOEM Bureau of
Ocean Energy Management

Offshore Carbon Sequestration (CS)

DOE Regional Carbon Management Applicant Education Workshops

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- Section 40307 of BIL amends the Outer Continental Shelf Lands Act to authorize the Secretary of the Interior to grant a **lease, easement, or right-of-way** on the Outer Continental Shelf for activities that “provide for, support, or are directly related to the **injection of a carbon dioxide stream into sub-seabed geologic formations for the purpose of long-term carbon sequestration.**”
- Additionally, the law directs, “Not later than 1 year after the date of enactment of this Act [November 14, 2022], the Secretary of the Interior shall promulgate regulations to carry out the amendments made by this section.”



Rulemaking Summary

- Joint Bureau of Ocean Energy Management (BOEM) – Bureau of Safety and Environmental Enforcement (BSEE) rulemaking is underway
- Rulemaking team established relying on existing expertise throughout the bureaus
- Extensive outreach underway
- Topics under consideration for the rulemaking include:
 - Financial and economic considerations
 - Environmental considerations
 - Pre-lease exploration/site characterization
 - Leasing
 - Plans
 - Liability
 - Operations, facilities, and pipelines
 - Well qualification and offset infrastructure
 - Emergency response and mitigation
 - Monitoring and reporting
 - Decommissioning



Offshore Gulf of Mexico CS Potential

Advantages

Depleted Reservoirs

- Potential for greater available pressure margins
- Abundant geologic, geophysical, engineering and production data
- Proven trap and seal

Disadvantages

- Numerous legacy wells
- Smaller storage capacity
- Depleted reservoirs require an understanding of current reservoir pressures

Saline Aquifer

- Large potential storage capacity
- Fewer legacy wells
- Abundant geologic, geophysical, engineering and production data
- Multiple Stacked Reservoirs

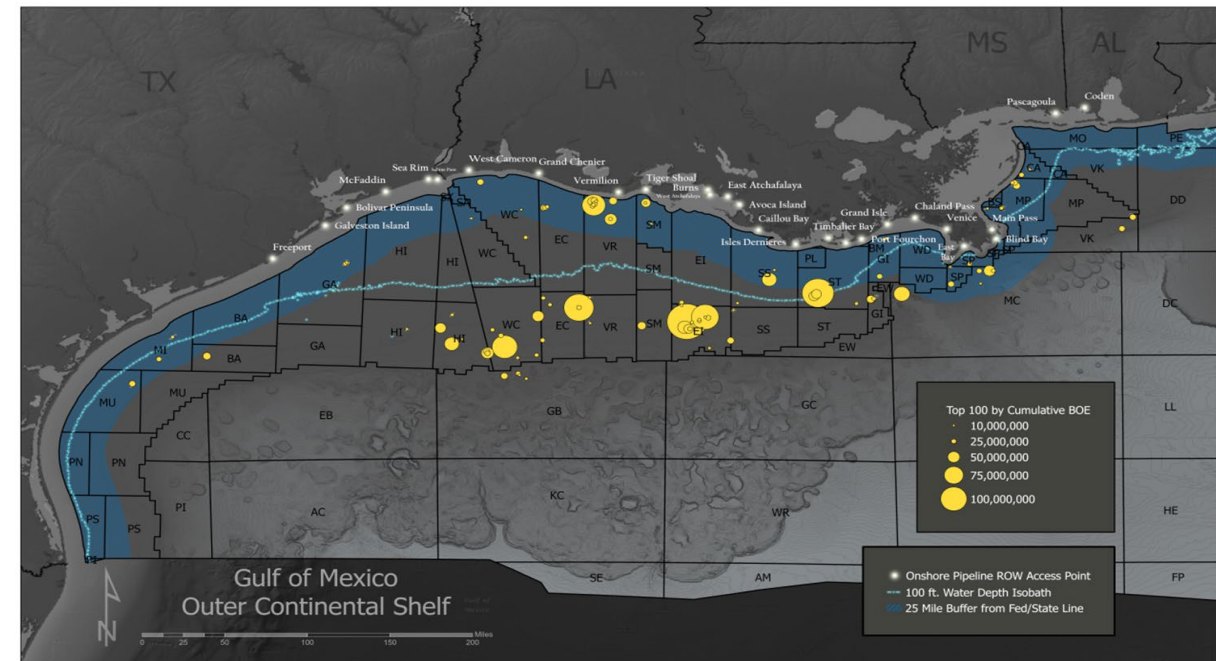
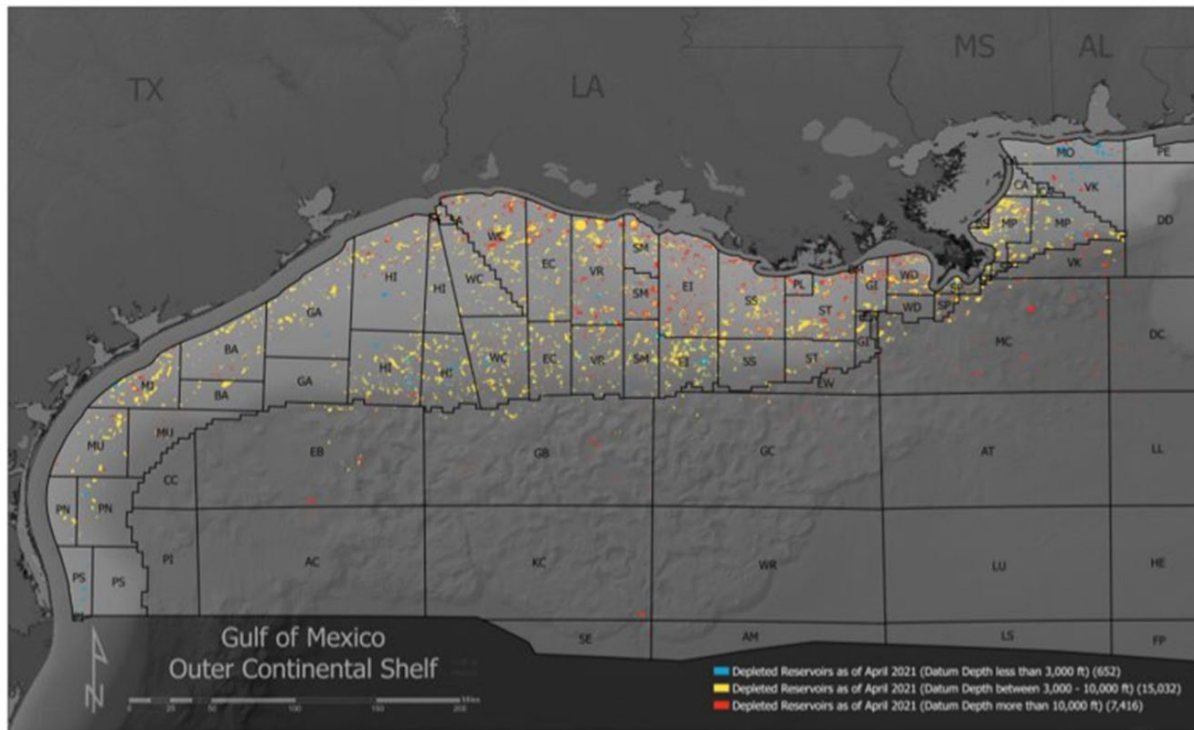
- Unknown seal integrity
- Smaller available pressure margin
- Monitoring challenges /economics



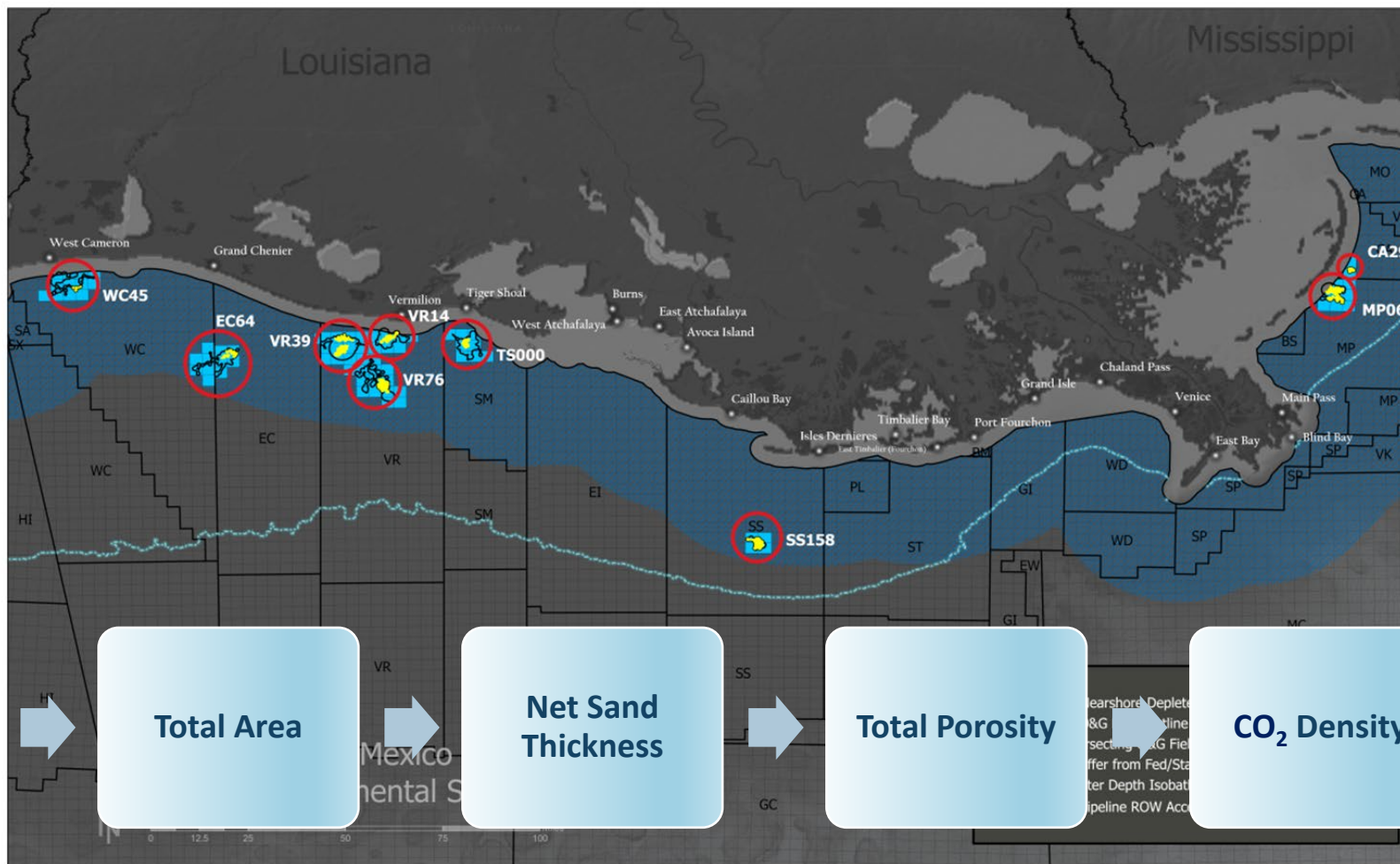
Depleted Reservoirs

Query analysis identified 100 largest producing reservoirs.

Distance to shore and water depth refined the list to 21 Reservoirs in 9 fields.



21 Depleted Reservoirs / 9 Fields



21 Tier 1 depleted reservoirs in the Gulf of Mexico based on:

- Production (>25MMBOE)
- Distance to Shore (<25 miles)
- Water Depth (<100ft)

Storage Capacity Estimates

Total Area

Net Sand Thickness

Total Porosity

CO₂ Density

Storage Efficiency Factor



Summary

The Gulf of Mexico and other United States OCS areas are poised to play a significant role in the nation's mission to reduce greenhouse gas emissions.

The geology of the offshore Gulf of Mexico, among other offshore basins, is conducive to safely and permanently store large amounts of CO₂ in subsurface reservoirs, both saline aquifers and depleted oil and gas reservoirs.

Gulf of Mexico CS characterization efforts identify numerous potential depleted reservoirs for geologic storage of CO₂.

BOEM and BSEE are well situated to oversee offshore CS given their significant geological, environmental, and offshore energy regulatory experience that will be critical to establishing and implementing a robust offshore CS regulatory regime.





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