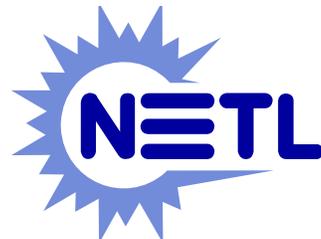


SECARB: Preliminary Evaluation of Offshore Transport and Storage of CO₂



5th Annual
SECARB Stakeholders' Briefing
March 9, 2010

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Geoscience Programs
Southern States Energy Board



Acknowledgements

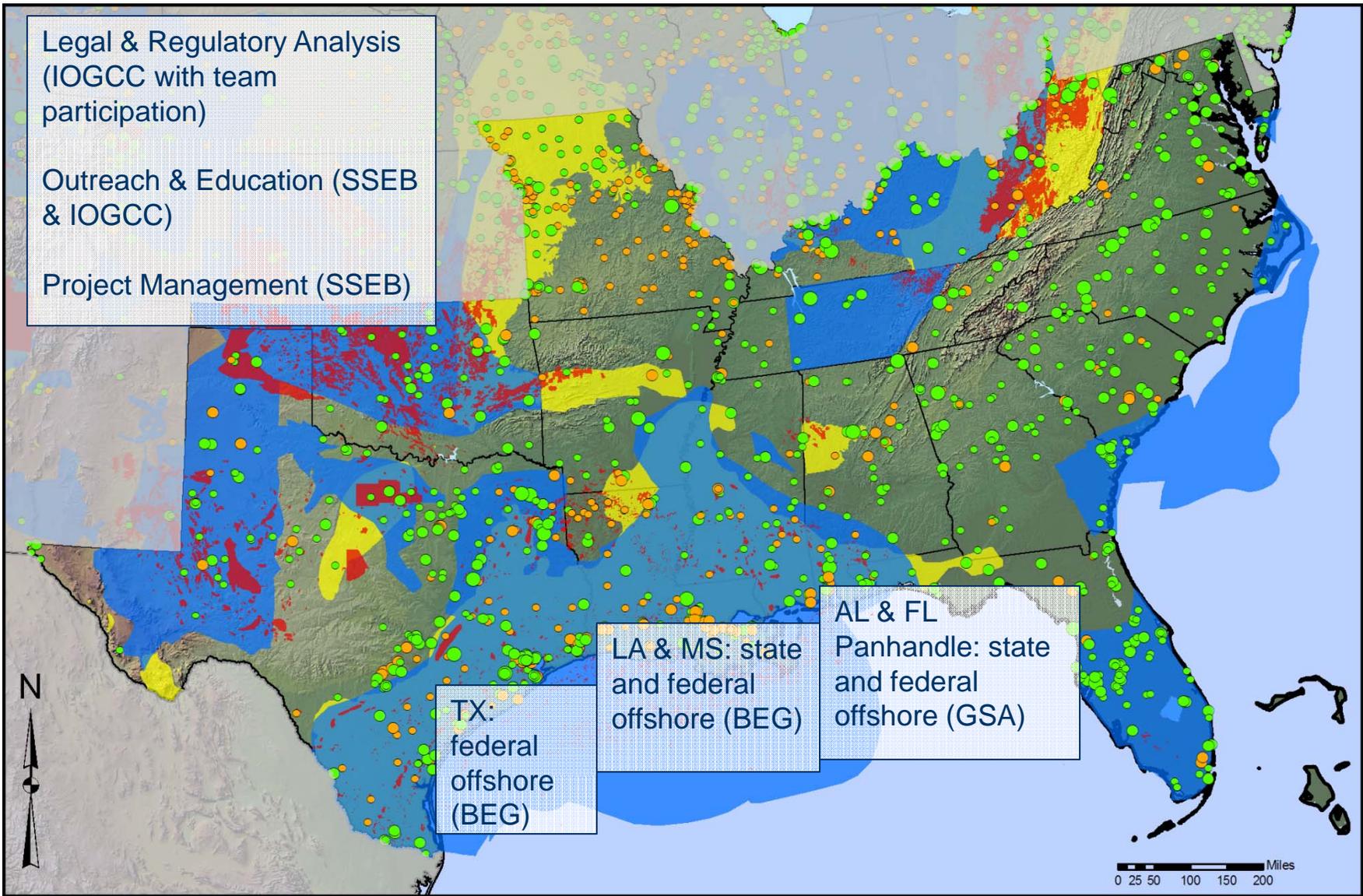
- This material is based upon work supported by the Department of Energy National Energy Technology Laboratory under DE-FC26-04NT42590.
- Collaborators
 - Geological Survey of Alabama (GSA, Denise Hills)
 - The University of Texas at Austin, Bureau of Economic Geology (BEG, Rebecca Smyth)
 - Interstate Oil and Gas Compact Commission (IOGCC, Kevin Bliss)



Offshore Transport & Storage Study

- Established in 2009 as Task 15 under the existing SECARB Phase III Cooperative Agreement with NETL.
- Duration: 18 months
- Purpose: Determine if offshore settings and any existing infrastructure are suitable for a sequestration project.
- Two scenarios:
 - 1. Existing oil and natural gas fields near end of productive life.
 - 2. Geologic settings may be suitable but area not subject to oil and natural gas production.





CO₂ Sources and Sinks in the Southern States Energy Board Region

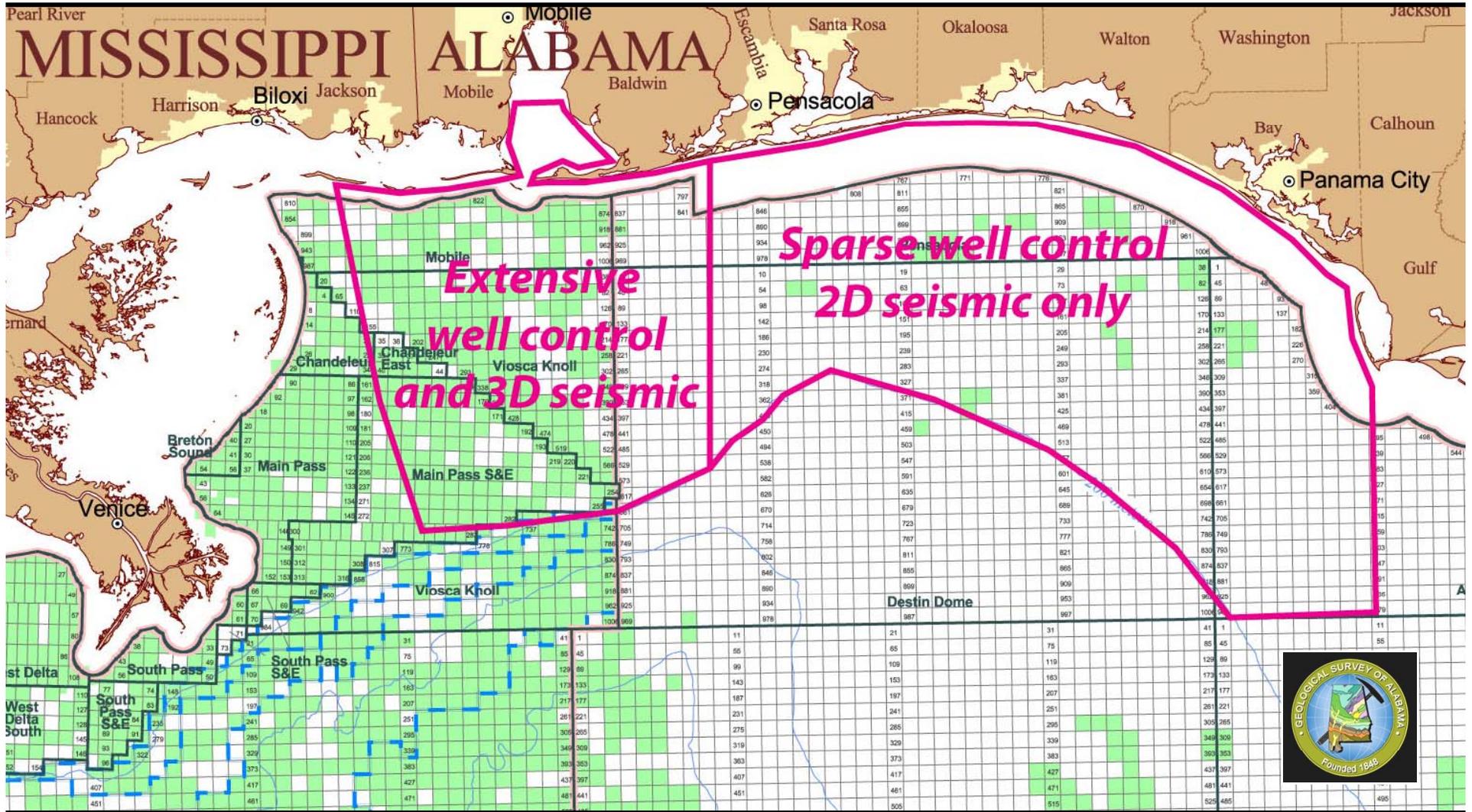


- Evaluated Oil and Gas Reservoirs
- Evaluated Saline Formations
- Evaluated Coal Seams

- CO₂ Sources By Type (Tonnes)**
- | Other | Electricity Generation |
|--|---|
| ● < 500,000 | ● < 500,000 |
| ● 500,000 - 10,000,000 | ● 500,000 - 10,000,000 |
| ● >10,000,000 | ● >10,000,000 |

Disclaimer - This map was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights.

MAFLA Shelf Study Area



MAFLA Shelf Study Area

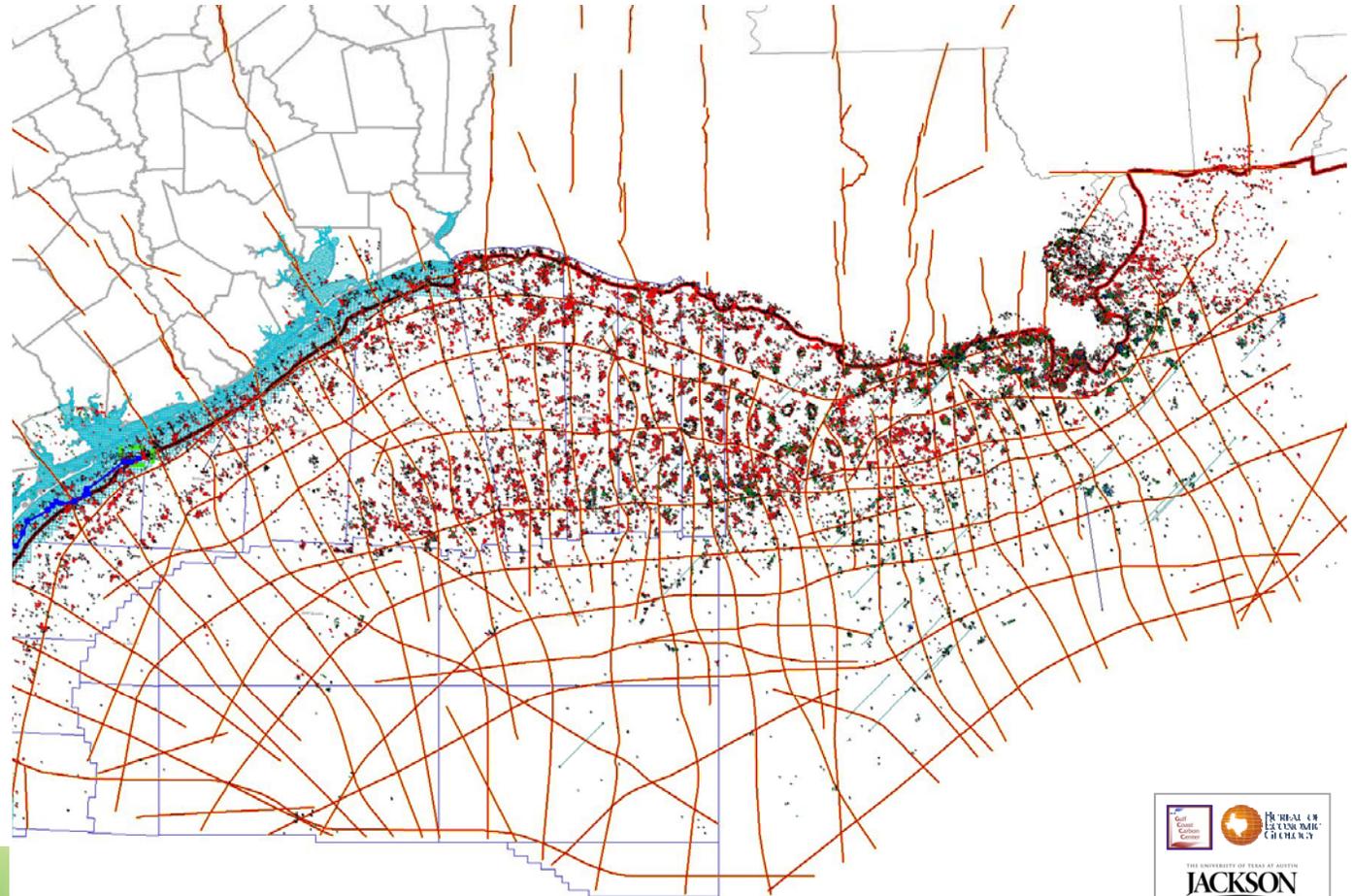
- East end of major GOM leasing activity in State and Federal waters
- Gas fields producing in Jurassic-Miocene strata between depths of 3,000 and 23,000 feet.
- Depleted Miocene fields being considered for gas storage – potentially available for CO₂ storage
- Exploration active in Cretaceous carbonate shelf and shelf margin, as well as deepwater Jurassic and Tertiary.



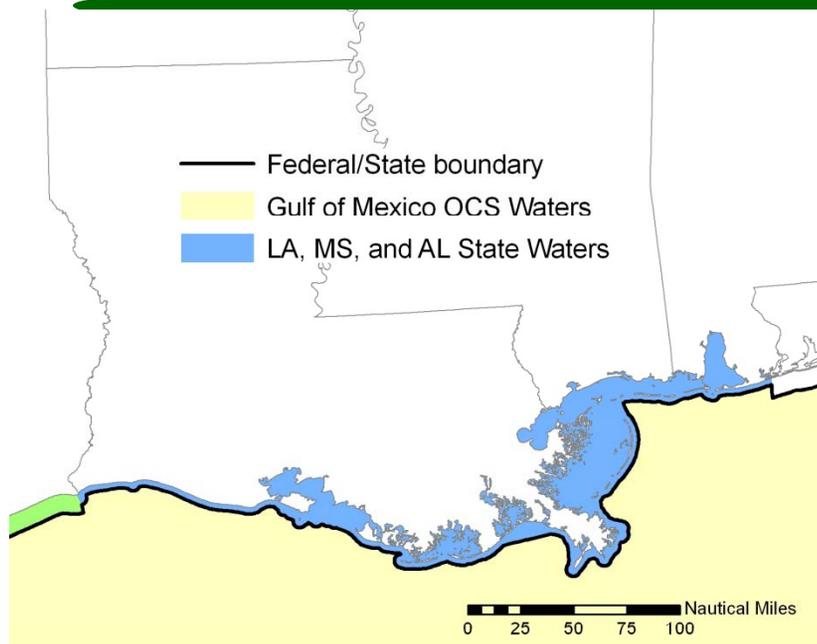
Western Gulf of Mexico Data Availability

Sources of Data

- orange lines - 2-D seismic
- red dots – gas wells
- green dots – oil wells



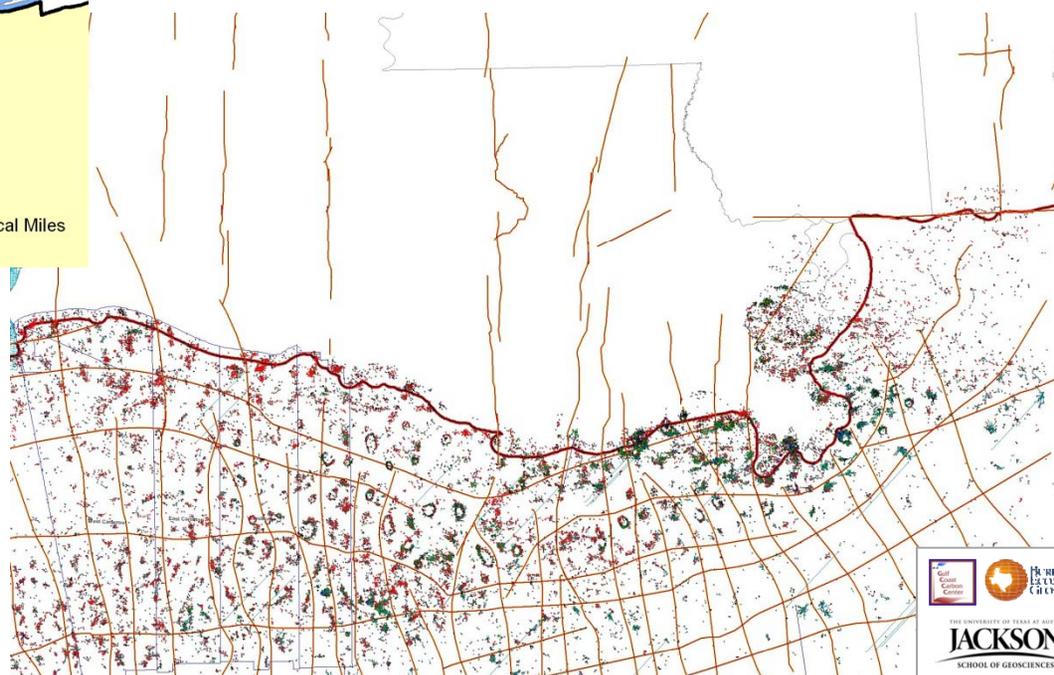
LA and MS State Waters



LA State Legislature has begun providing guidance for onshore and offshore geologic sequestration (Louisiana Geologic Sequestration of Carbon Dioxide Act #517, approved July 10, 2009)

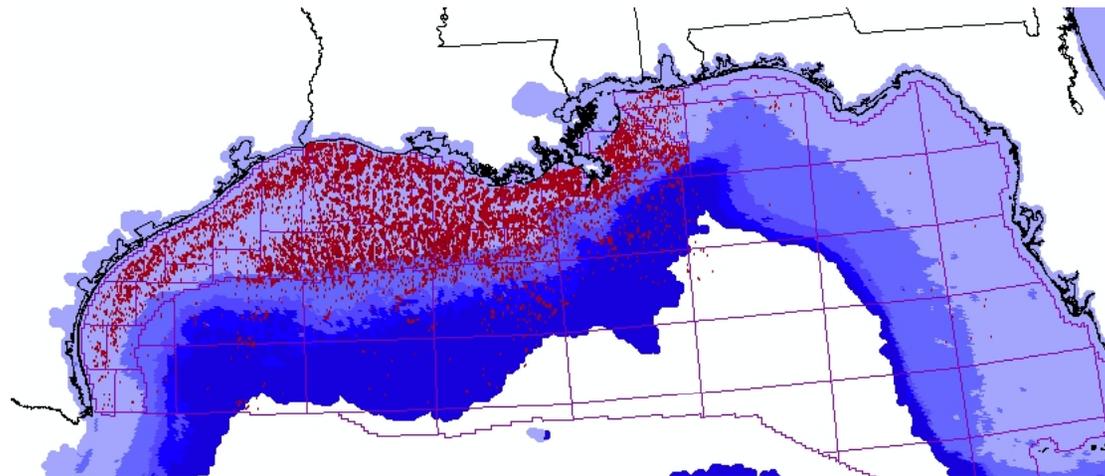


Right: Note circular salt dome structures outlined by wells in OSC waters



Western Gulf of Mexico OCS Considerations

- Water depths (most existing wells on shelf – image below)
- Existing pipeline infrastructure
- Locations of geological structures (salt domes, faults, etc.)
- Influence of pressure and temperature gradients on CO₂ density



Legal & Regulatory Analysis

- IOGCC and SSEB have created an Task Force to explore legal and regulatory aspects of the offshore transport and storage of CO₂.
 - Chairman: Nick Tew, Alabama Oil and Gas Supervisor and State Geologist
- Identify legal and regulatory requirements for offshore sequestration, including the potential for re-use of existing wells for injection:
 - What are the current legal and regulatory structures?
 - What are the challenges likely to be faced by stakeholders?



Legal & Regulatory: Task Force Participants

Participants:

- Conrad Ambrecht, AL
- Lawrence Bengal, AR
- Brent Campbell, LA
- Richard Esposito, AL
- Jack Moody, MS
- Jack Pashin, AL
- Marvin Rogers, AL
- Harold Syms, MMS
- Rebecca Smyth, TX
- Bruce Brown, NETL

Coordinated by:

- Kevin Bliss, IOGCC
- Cynthia McCollum, IOGCC
- Kimberly Sams, SSEB

Planned “Kick-Off” Meeting in
Tuscaloosa, AL

March or Early April 2010



Outreach & Education

- At conclusion of the study, the IOGCC and SSEB will work together to conduct public outreach and education
- Broad distribution of findings to regional and national stakeholders



Work Products

- CO₂ Capacity Assessment for Delineated **Federal Waters** (September 30, 2010)
- CO₂ Capacity Assessment for Delineated **State Waters** (September 30, 2010)
- Inventory of Existing Wells and Pipelines - **Federal Waters** (September 30, 2010)
- Inventory of Existing Wells and Pipelines – **State Waters** (September 30, 2010)
- Guidance Document for Offshore Sequestration of CO₂ – Legal & Regulatory (March 31, 2011)
- Briefing materials (throughout life of the project)



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