



GULF COAST
SEQUESTRATION

Why GCS?

- GCS is developing a regional sequestration “hub” capable of securely storing CO₂ volumes from carbon producers.
- The GCS acreage has been well studied and includes pore space that is ideally suited to sequester significant volumes of CO₂.
- The GCS team includes several of the world’s leading experts on carbon capture and sequestration who bring insight and experience on geology, petrophysics, seismic, and reservoir modeling and simulation as well as the complex legal and regulatory issues involved with a project of this size and scale.

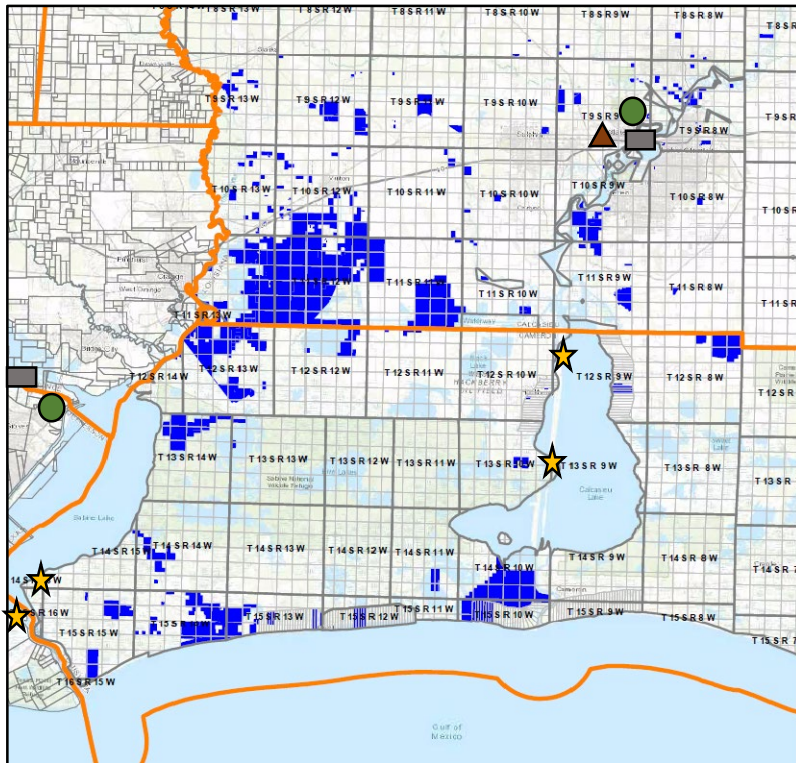
Why Now?

- New federal tax credits and state policies have made it economically attractive for some industrial facilities to install carbon capture and sequestration (CCS) systems to dramatically reduce their CO₂ emissions.
- GCS is seeking to qualify as an eligible CCS project under the update to US federal tax credit (45Q) and the update to California’s Low Carbon Fuel Standards



GCS PORE SPACE: IDEALLY LOCATED

Our pore space has unique attributes and is located near CO₂ production.



1. Large contiguous landholdings.
2. Single owner of surface and subsurface.
3. Access to carbon – sits in the middle of the expanding petrochemical complex between the Sabine River and Lake Charles.
4. Great rock - reservoir which has sealing caprock, thick section of sandstone and has extensive academic research re: saline sequestration of carbon.
5. Comprehensive data set – 3D seismic over the entire acreage position.

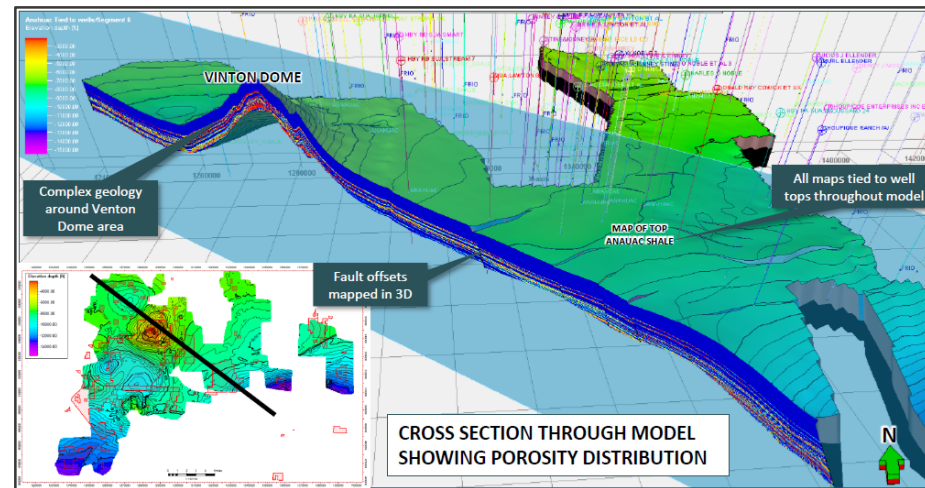
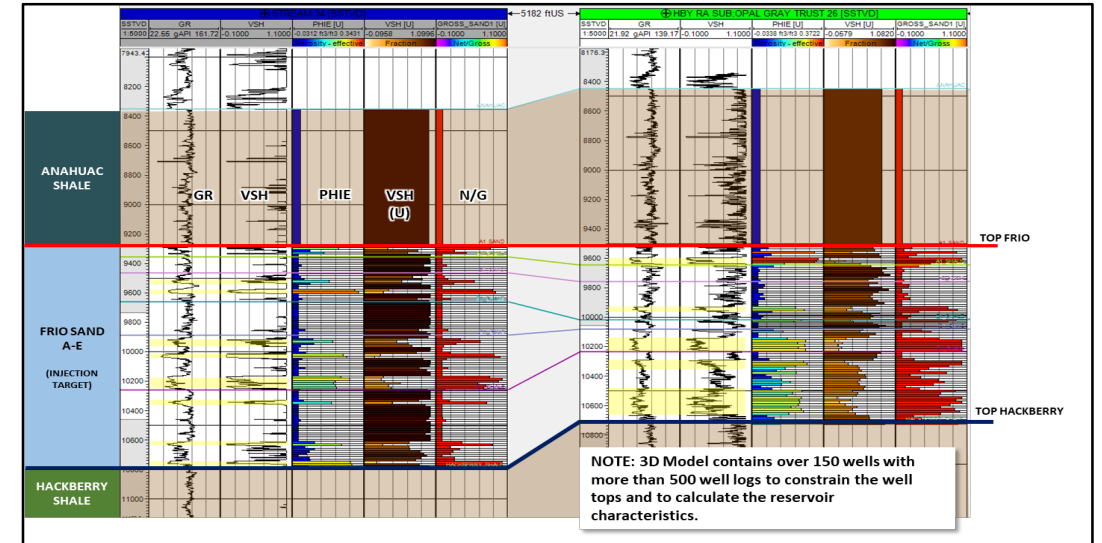


GCS PORE SPACE: WELL STUDIED

We are focused on understanding the suitability of our pore space for carbon sequestration.

Process for conducting regional scoping:

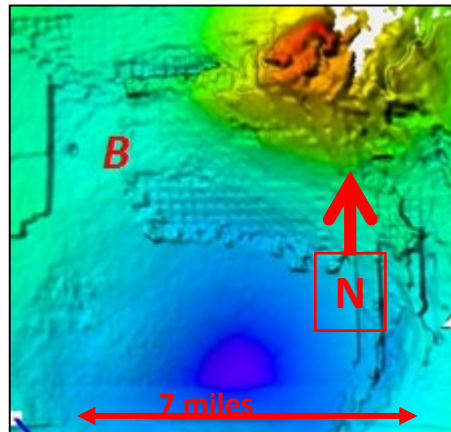
1. Construct well database over an extensive AOI. Incorporate all regional wells that have been drilled in Calcasieu and Cameron Parishes, including identifying all USDW wells as reported to the State (SONRIS).
2. Digitize and conduct well log analysis to characterize the sealing and reservoir storage capacity.
3. Interpret and incorporate regional seismic data set to identify structural features (salt domes and faults).
4. Create 3D geostatistical model in Petrel.
5. Transfer to Reveal for simulation.



REGIONAL SIMULATION PROCESS

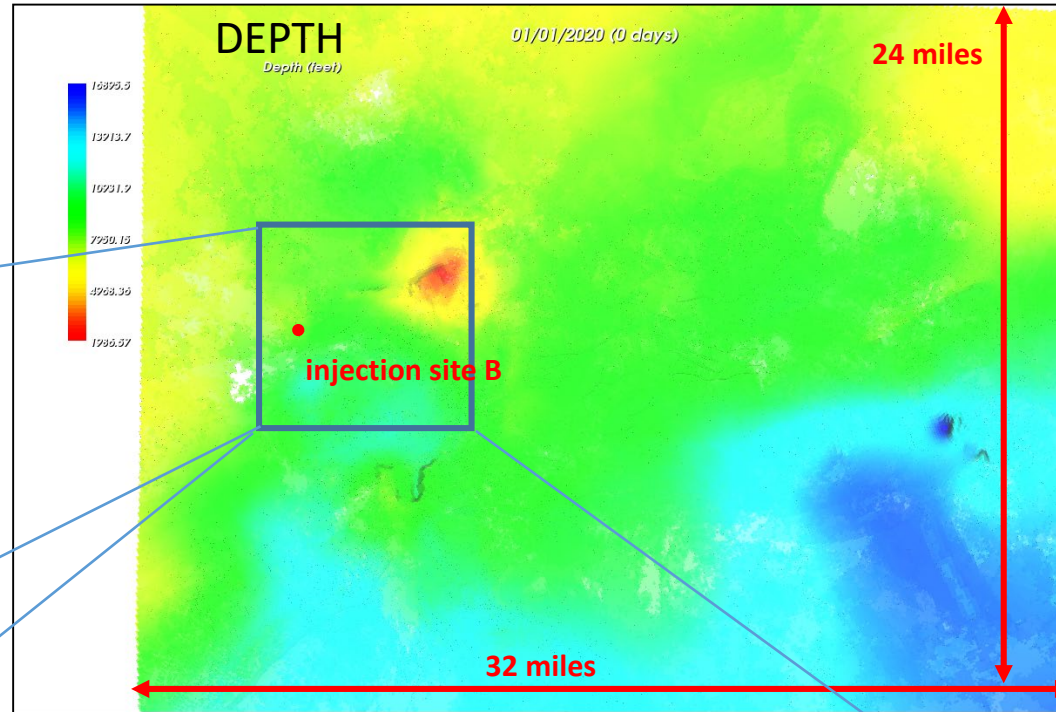
From geo-model (Petrel) to simulation (Reveal)

A Petrel geo-model

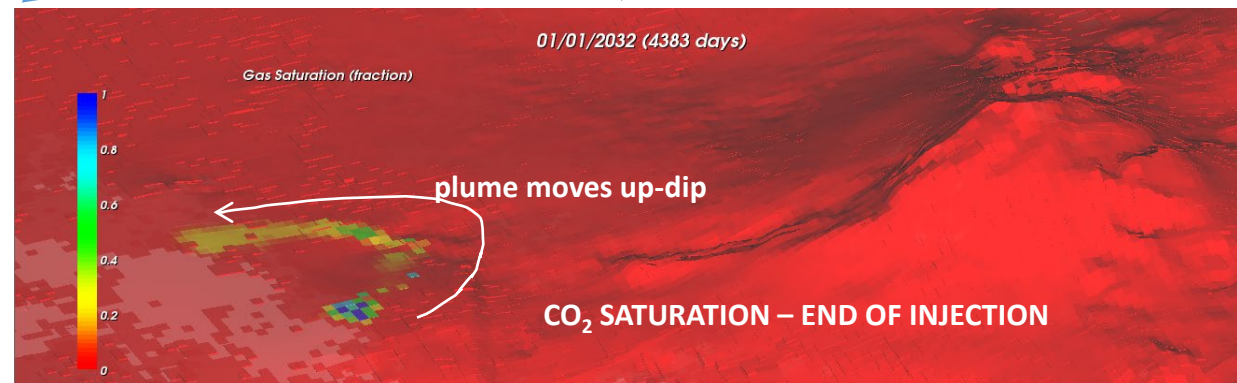


Defines geology:
gridded model of porosity,
permeability, NTG with structure
(image shows small area of
Petrel model)

export grid
to Reveal



Simulation



B Reveal model

Reveal is a fully functional simulation tool:

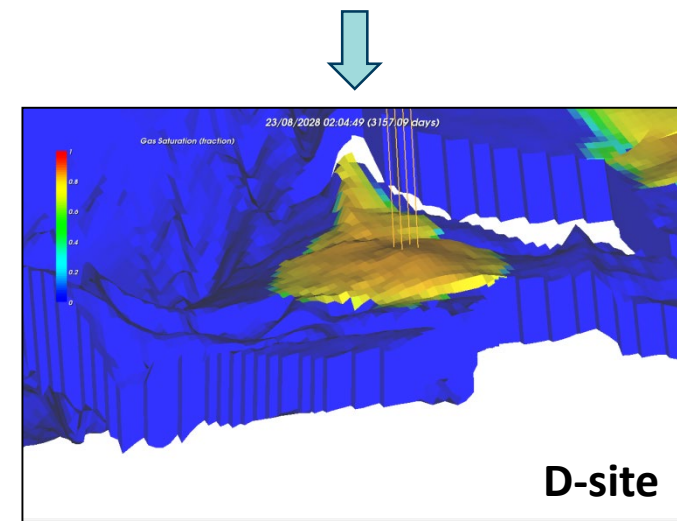
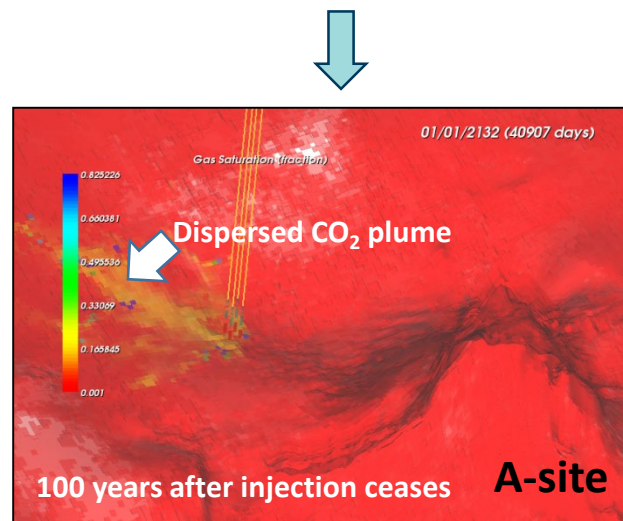
- Full 3D capability
- Peng Robinson equation of state
- Accurately models physics of CO₂ behaviour
- Full energy balance
- Geo-mechanics
- Aqueous phase geo-chemistry
- Detailed well modelling

C Reveal model



KEY FINDINGS FROM REGIONAL SIMULATIONS

- Initial understanding of the geological and simulation model suggest the following characteristics for a preferred site:
 - Areas away from high formation dips (ie away from salt domes), which accelerate CO₂ migration, or areas that have a defined structural closure.
 - Adequate reservoir capacity within the Frio Section to be able to store significant volumes.
- Tested 7 sites (A to G) – A, B & D exhibiting advantageous characteristics.
- Two types of trapping mechanism exploited – (1) saturation & dissolution trapping and (2) local 4-way closure.
- Good injectivity at all sites, maximum injection pressures at wells < fracturing pressures.

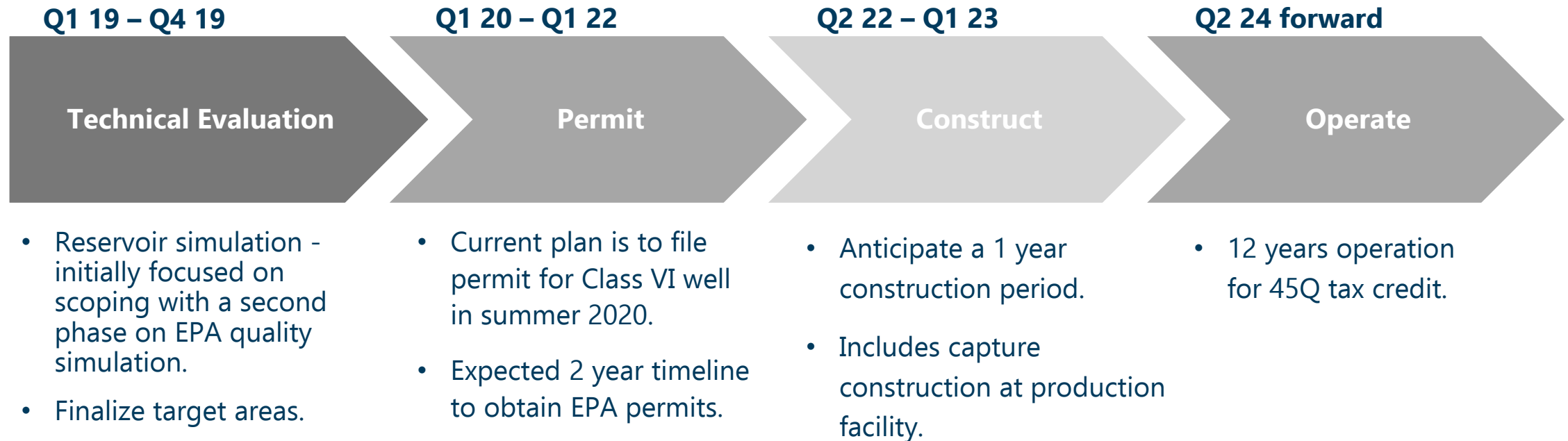


NEXT STEPS FOR PERMITTING

- Choose up to 3 sites for more detailed geological modelling and reservoir simulation (may require re-iteration of multisite testing) and draw up conceptual model of each site.
 - Incorporate a higher level of geological (stratigraphic, facies and petrophysical detail) into the model.
 - Reinterpret reprocessed seismic data set.
- Identify & rank risks associated with each site, characterizing risks in terms of physical model.
 - Convert to geological/simulation model and define how risk is measured in model results.
 - Identify data/parameters required for risk modelling and determine uncertainty (range of parameter values) in risk model parameters.
 - Run models to determine outcomes of range of risk parameters.
- Evaluate risks to reassess sites & determine further data acquisition program.



TIMELINE FOR ACTIVITY



MISSION STATEMENT



GULF COAST
SEQUESTRATION

Secure Sustainable Storage

Gulf Coast Sequestration (GCS) will build and operate the country's premier geologic sequestration asset, partnering with industrial customers to capture CO₂ and safely contain it underground.

Working together, we can help steer the United States toward a more economically and environmentally sustainable future.

