Gary Climate Solutions

GARY CLIMATE SOLUTIONS

Schlumberger Digital Forum

September 2022

Outline

- Who is Gary Climate Solutions
- Current CO_2 Capture Operation
- Pre-Feasibility Study for CO_2 Sequestration
- Partnership with SLB to perform Feasibility Study on CO_2 Plume for Class IV
- Future Work with SLB to submit Class IV Permit with EPA

Gary Climate Solutions

Overview

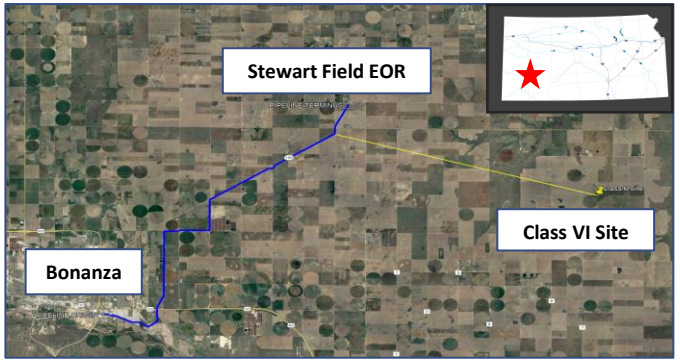
- A division of Sam Gary Jr. & Associates focused on geologic carbon sequestration
- Provide Turnkey Solution for capturing, transporting and storing CO_2
- GCS actively pursuing multiple large scale storage hub and single point CCS projects throughout the US.

Carbon Capture, Transportation & Storage

- Existing facility located in Garden City, Kansas at the Bonanza BioEnergy Ethanol Plant capturing ~150,000t CO2 annually
- One of 11 active carbon capture operations in the U.S.
- GCS currently owns & operates 15 miles of CO_2 pipeline
- Operational as an EOR project since 2012, Class VI well permitting underway

Bonanza BioEnergy Capture Facility

Asset Locator Map

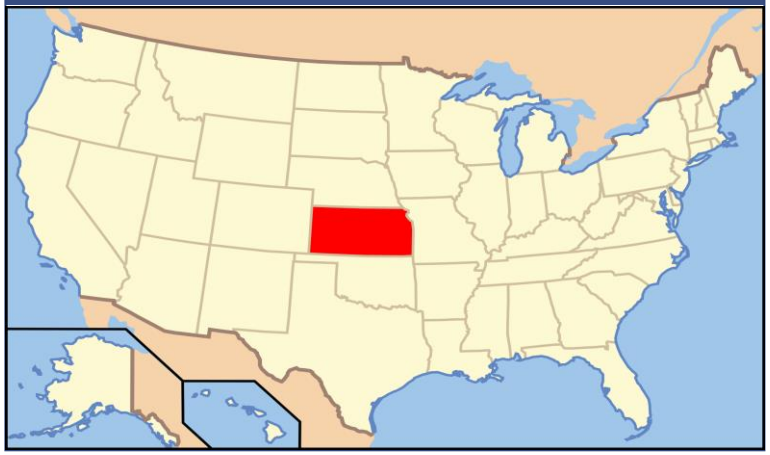


GCS Core Competence in Drilling and Reservoir Management in Kansas

Kansas Experience

- Active in the energy business since 1980's with a core focus of operations in Kansas and across the Mid-Continent region
- Led early exploration efforts in Kansas, leading to the discovery of 40 new fields, many producing from the Arbuckle formation
- Decades of Kansas expertise in geological, reservoir and disposal Management
- GCS is participant in Kansas CCUS Task Force aimed at advancing CCS initiatives
- The petroleum industry is a major contributor to the economy in Kansas
- Decades long relationships with Kansas Geological Survey and Kansas Corporation Commissions
- Operator of only CO2 flood in the state

Kansas Activity Map



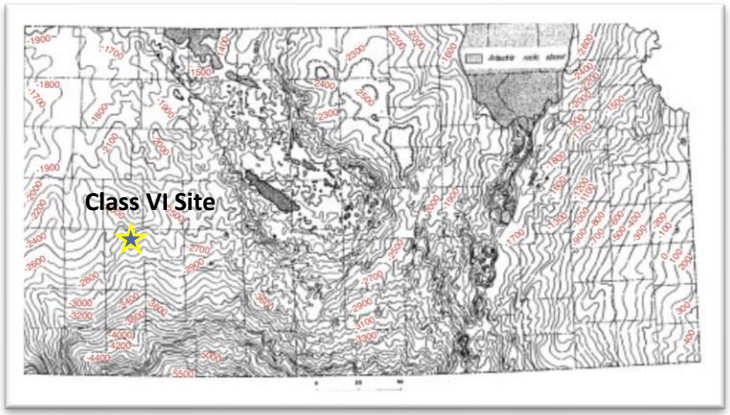
Kansas Historical Activity

- Continuous operations in Kansas since inception
- Cumulative proved reserves ~ 5 MMBbl
- One of the first to explore in Kansas using 3-D seismic technology
- Leased >200,000 net acres across the state
- Unrestricted access to ~1,500 square miles of proprietary 3-D seismic data
- Operate several water floods across the state

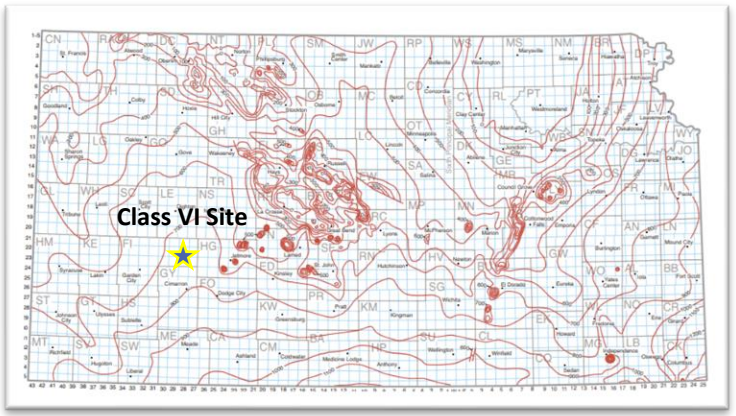
GCS Pre-Feasibility Study Sequestration Potential

Cambrian Age; Arbuckle formation is best target for sequestration in Kansas

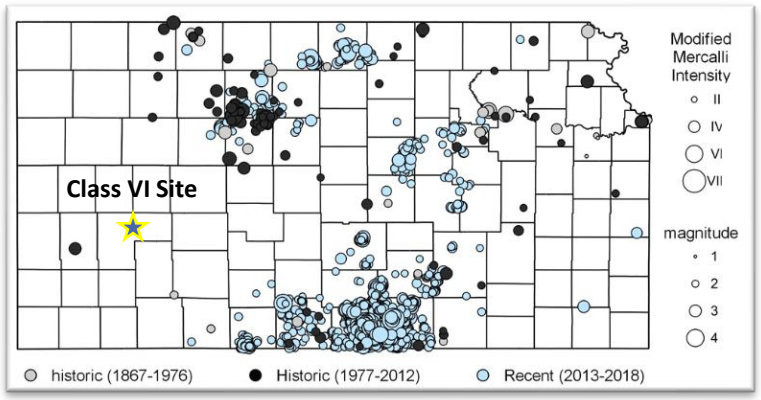
Structure: >2,700’ TVD



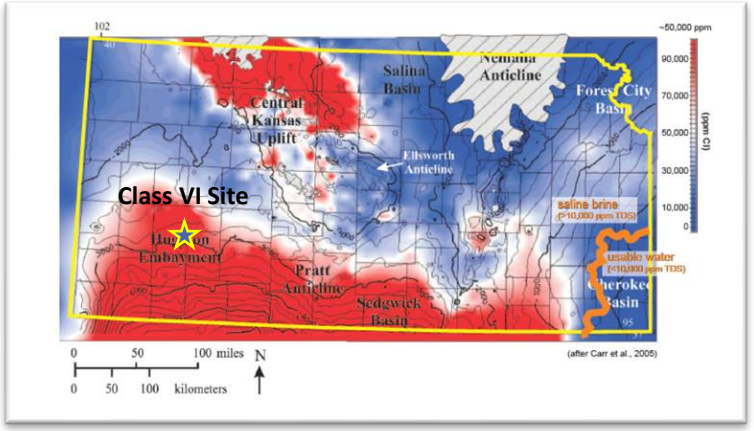
Thickness: Sufficient Storage Capacity



Earthquakes: Seismically Quiescent



Salinity: > 10,000 ppm

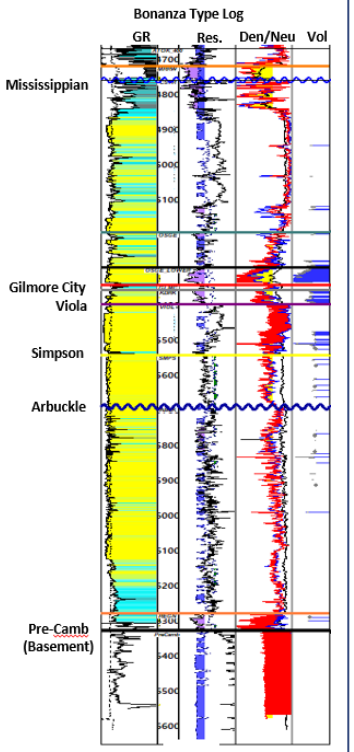


Pre-Feasibility Study Summary

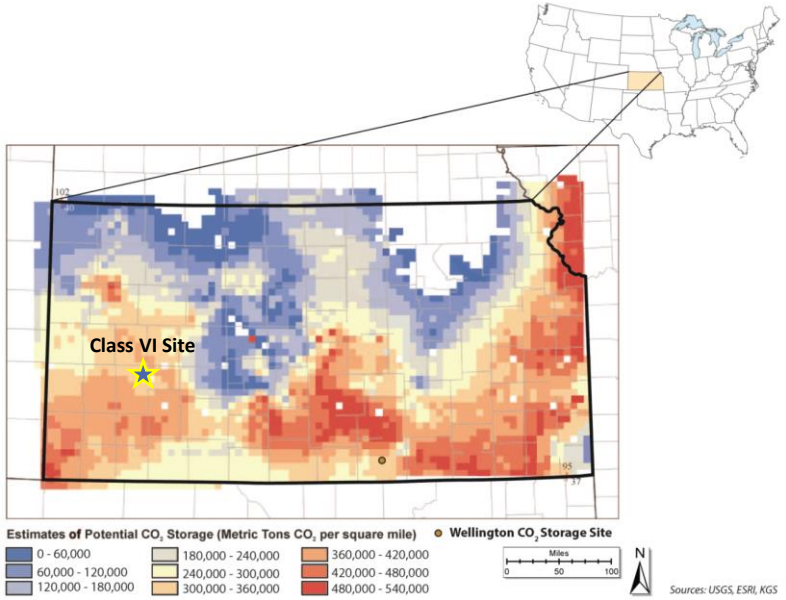
Class VI Site

- Depth: ~5,500 ft
- Lithology: Dolomite
- Thickness: 600-700’
- Porosity: 10-12%
- Permeability: >10 md
- Salinity: ~60,000 ppm
- Pressure: ~1,400 psi
- Temperature: ~110 deg F
- Fresh Water: <200’ TVD
- Seal: ~300’

Type Log



Storage Potential USGS Study



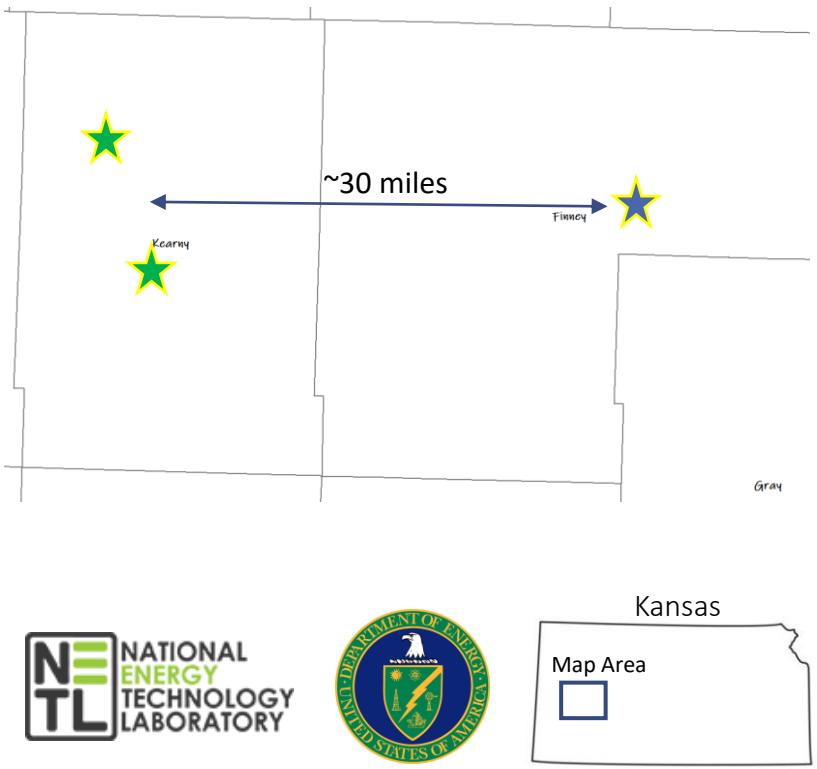
SLB Feasibility Study

What is the size of CO_2 plume after 30 years of injection?

Carbon Storage Assurance Facility Enterprise (CarbonSAFE)

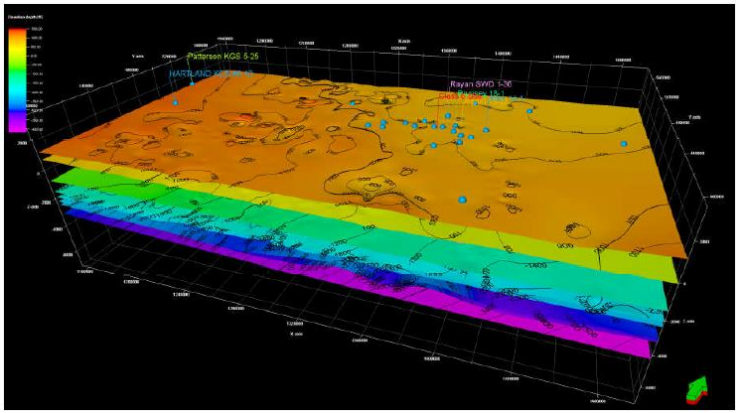
- Department of Energy (DOE) funded organization
- Kansas Geological Survey (KGS) received grant from CarbonSAFE to study sequestration potential for the Arbuckle in Kansas
- KGS/CarbonSAFE drilled two characterization wells
- Data was acquired and used by SLB to generate site feasibility for GCS Class VI site
- Dataset: Logs (Quad Combo, NMR, Litho Scanner, Image), Whole Core Data, Injection Test

Well Locator: KGS Wells & GCS Class VI Well

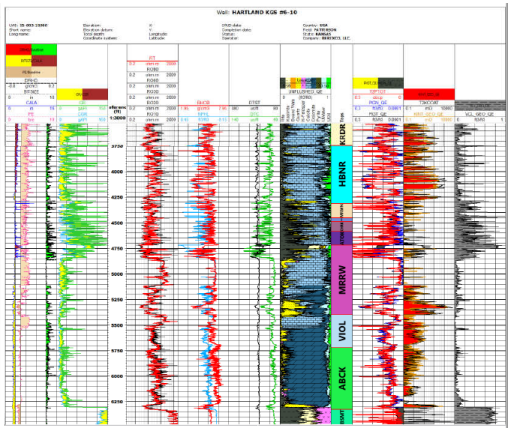


SLB Building Feasibility Study Model

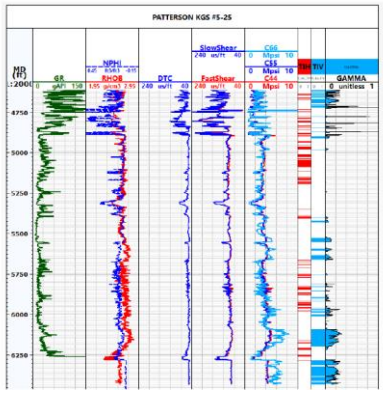
Regional Geology Model

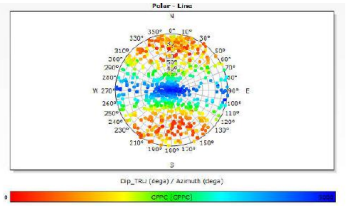


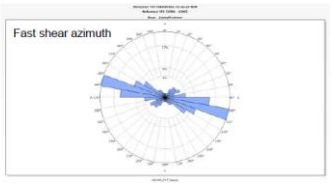
Petrophysical Analysis



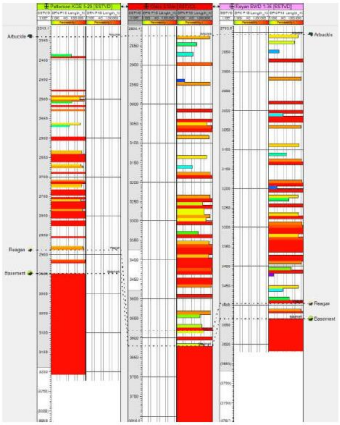
Geomechanics







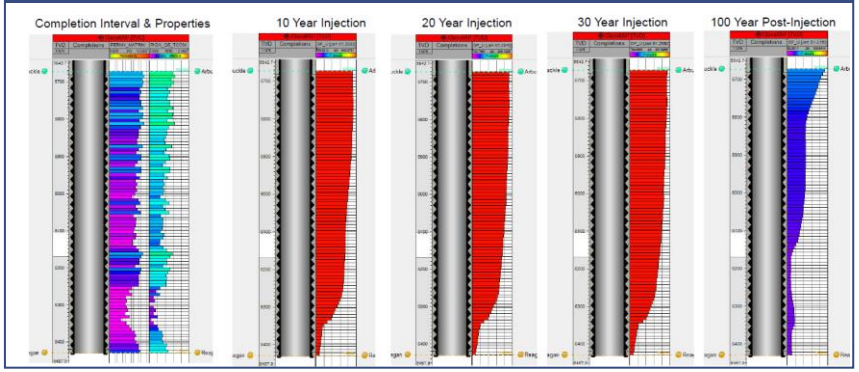
Discrete Fracture Analysis (DFN)



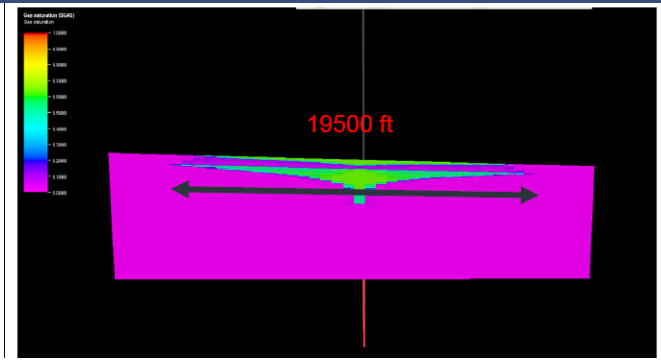
SLB Feasibility Study Model Outputs

- Modeled 30-year injection of 150,000 tons CO_2 per year (4.5 MT CO_2)
- Diameter of plume 19,500’ (3.69 sq. mi or 5.94 km)

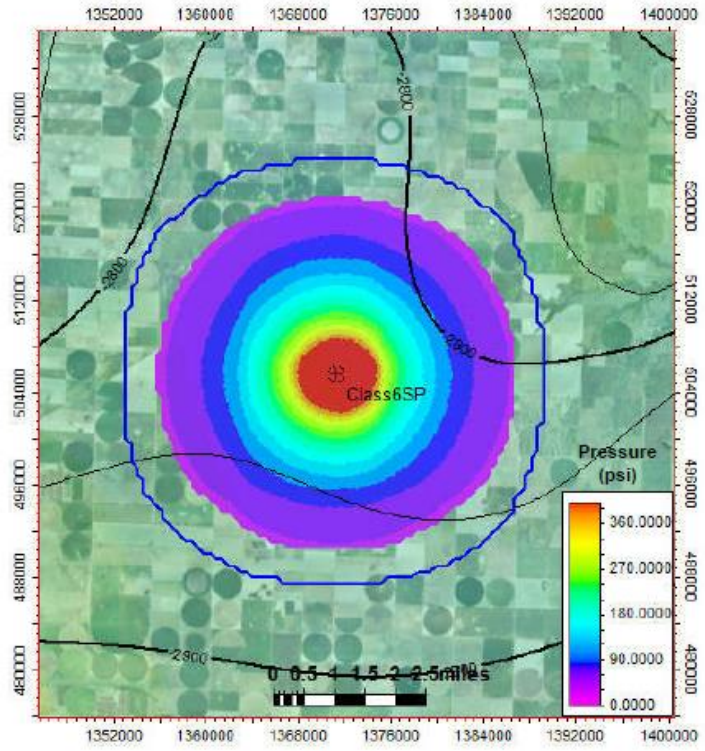
Wellbore Pressure Profile



Modeled Plume: Cross section



Modeled Plume: Map View



SLB feasibility study confirms Arbuckle is an excellent sequestration target

Future Work

- ❑ Spud Pre-Characterization well to confirm SLB Model Q4 2022
- ❑ Take Sidewall Cores
- ❑ Run SLB open hole log sweep
- ❑ SLB will analyze new data and update model with new inputs
- ❑ SLB will work with GCS to file Class VI permit with EPA (Environmental Protection Agency)
- ❑ Drill Characterization Well to acquire data needed to get injection approval from EPA
- ❑ Start injection in Class VI sequestration well

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Q&A

www.garyclimatesolutions.com