Critical Challenges. Practical Solutions.

Energy & Environmental Research Center (EERC)

Roughrider Carbon Storage Hub
(DE-FE0032282)

U.S. Department of Energy
Fossil Energy & Carbon Management / National Energy Technology Laboratory
Carbon Management Research Project Review Meeting
August 30, 2023

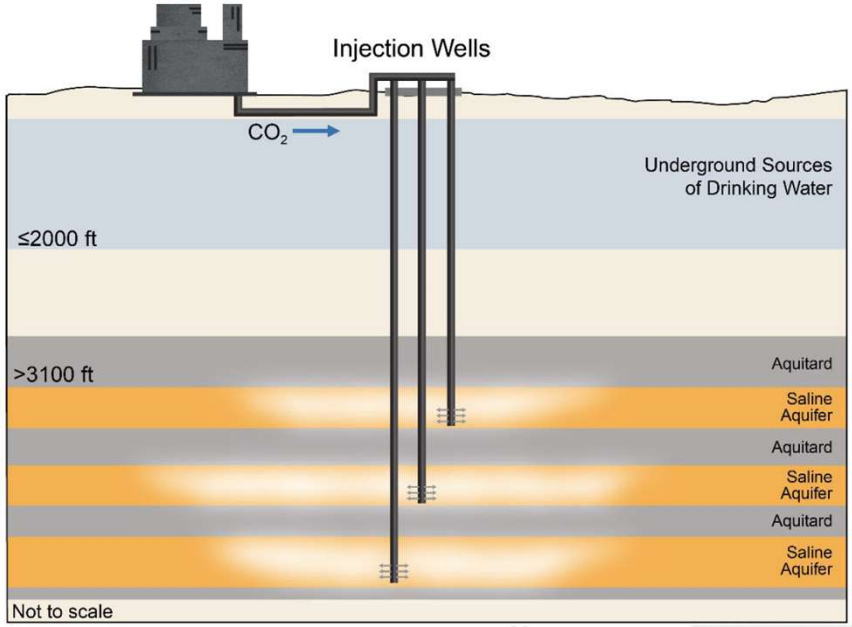
Wes Peck
Energy & Environmental Research Center

Project Summary

- 2-year project
- Investigate the feasibility of developing a commercial-scale CO_2 geologic storage hub in McKenzie County, North Dakota.
- Take CO_2 captured and aggregated from multiple distributed small-volume gas-processing facilities and a large planned gas-to-liquids facility.
- Stacked storage approach (multiple geologic formations)

Funding	DOE	Cost Share	Project Total
Dollars (MM)	$9.00	$7.55	$16.55
Contribution	55%	45%	100%

- Performance dates:
  - BP1: October 2023 - September 2025



EERC | U.S. DEPARTMENT OF ENERGY | NETL NATIONAL ENERGY TECHNOLOGY LABORATORY

PROJECT PARTNERS

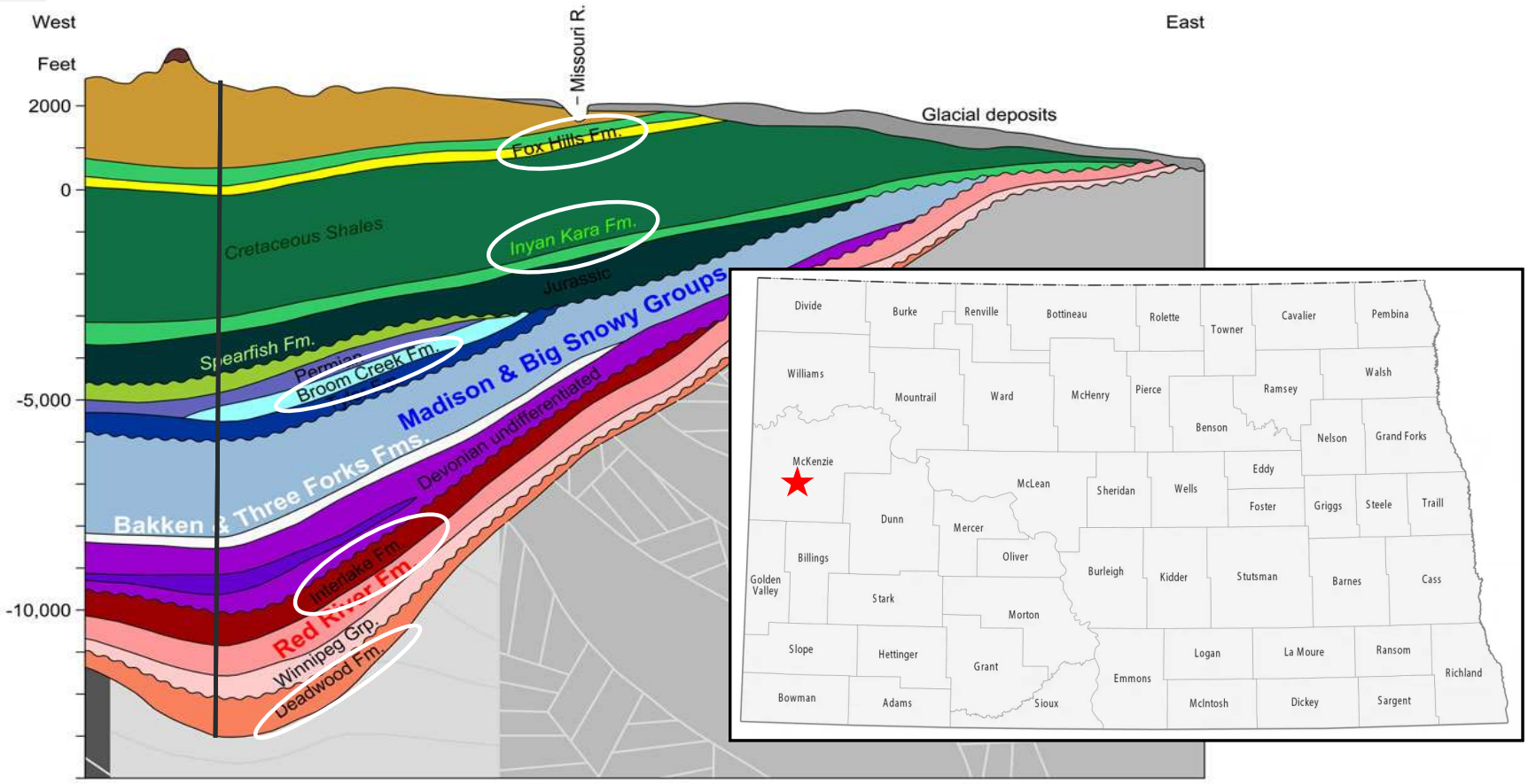
Lead Organizations

- ONEOK
- Energy & Environmental Research Center
  - (CarbonSAFE Phase II)

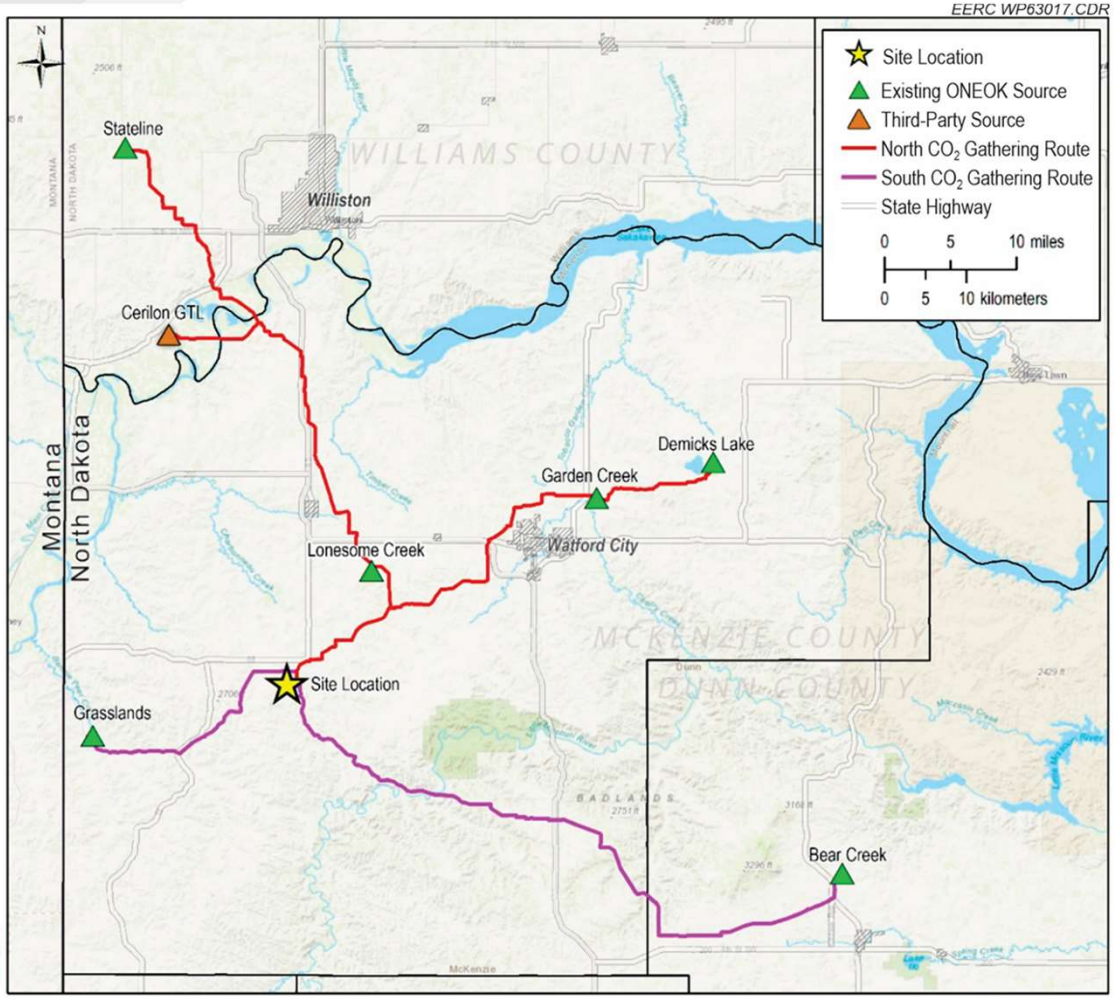
Project Partners

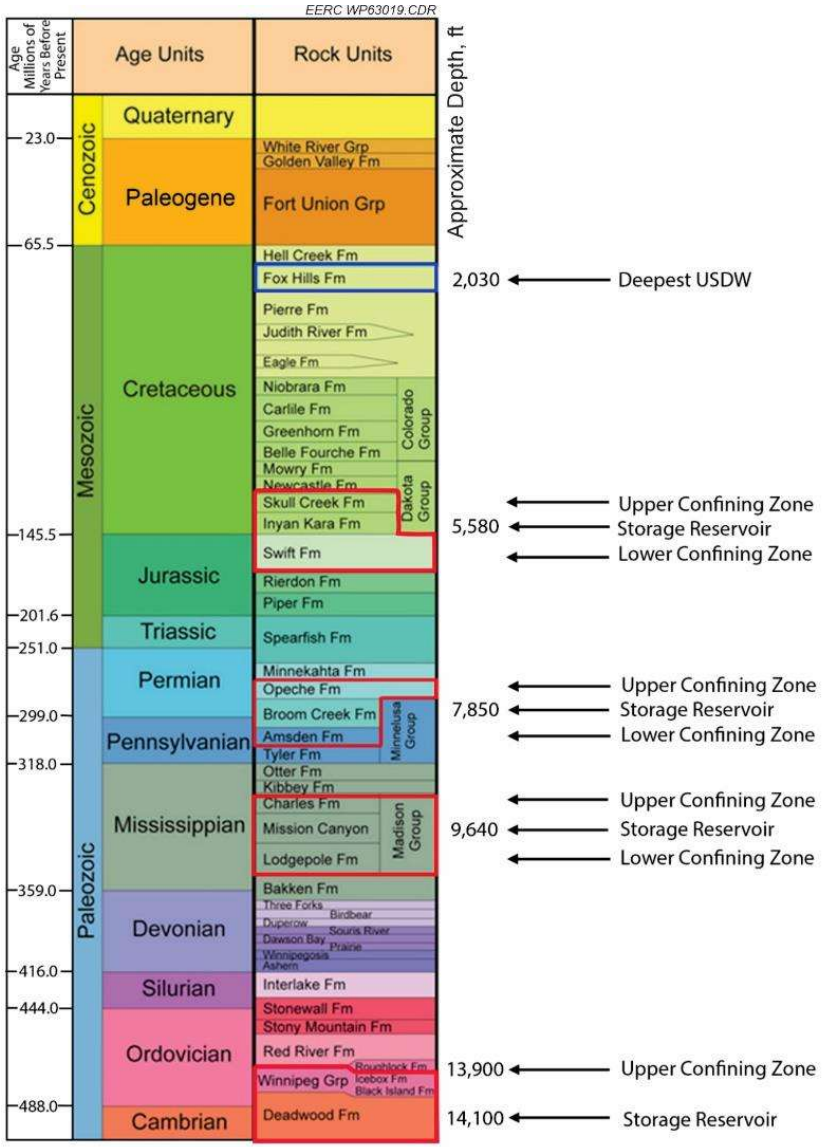
- North Dakota Oil & Gas Research Program
- U.S. Department of Energy
- Neset Consulting

Project Location



Project Summary





Stratigraphic Test Well

- Characterize up to four prospective CO_2 storage complexes (storage targets and associated confining zones) within the area of interest.
  - Recover and analyze >1000 feet of core
  - DSTs in the prospective horizons
  - Broad suit of geophysical logs collected.
  - Evaluate and model geologic CO_2 storage performance

- Drill to the pre-Cambrian basement…full stratigraphic depth of the Williston Basin.

Project Task Structure

- Task 1: Project Management
- Task 2: Community Benefits Plan
- Task 3: Storage Complex Characterization
- Task 4: Geologic Modeling and Simulation
- Task 5: Technical and Economic Analysis
- Task 6: Site Development Plan

SUMMARY OF COMMUNITY BENEFIT PLAN

Trustworthy messaging to enhance existing community relationships and foster neutral-to-positive attitudes toward the Roughrider CarbonSAFE project.

- Being factual and objective
- Serving our partners' best interests
- Courtesy and respect of the stakeholders and the community
- Transparent and proactive communication
- Consistent use of key messages

Where Are We Today

- Proceeding through contract negotiations with DOE.
- Hope to have an official start date on October 1st.
- Planning to use an existing well pad (move-in ready).

Wes Peck
Assistant Director of Subsurface Strategies
wpeck@undeerc.org
701.777.5195 (phone)

Energy & Environmental Research Center
University of North Dakota
15 North 23rd Street, Stop 9018
Grand Forks, ND 58202-9018

www.undeerc.org
701.777.5000 (phone)
701.777.5181 (fax)

Critical Challenges. Practical Solutions.