



Energy & Geoscience Institute  
AT THE UNIVERSITY OF UTAH

50  
YEARS



# FE0032266: Uinta Basin CarbonSAFE II: Storage Complex Feasibility

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# Acknowledgement

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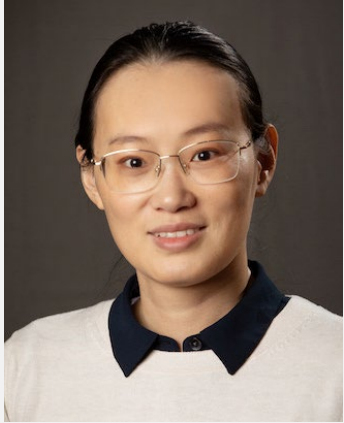
# Project Goal

## ***Uinta Basin CarbonSAFE II: Storage Complex Feasibility***

To establish the technical and economic feasibility of a commercial-scale CO<sub>2</sub> geological storage complex in the eastern Uinta Basin, Utah, to securely and economically sequester at least 50 million metric tons of captured CO<sub>2</sub> over 30 years.

# Our Project Team

## PI & Co-PIs



Dr. Ting Xiao



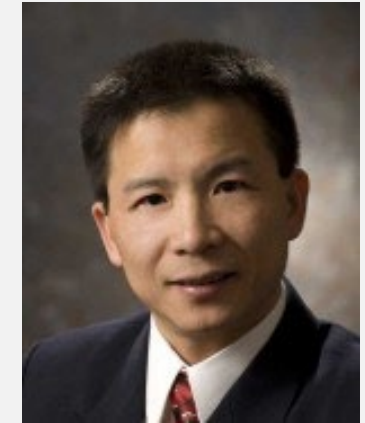
Dr. Brian McPherson



Mr. Michael Vanden Berg



Dr. Richard Middleton



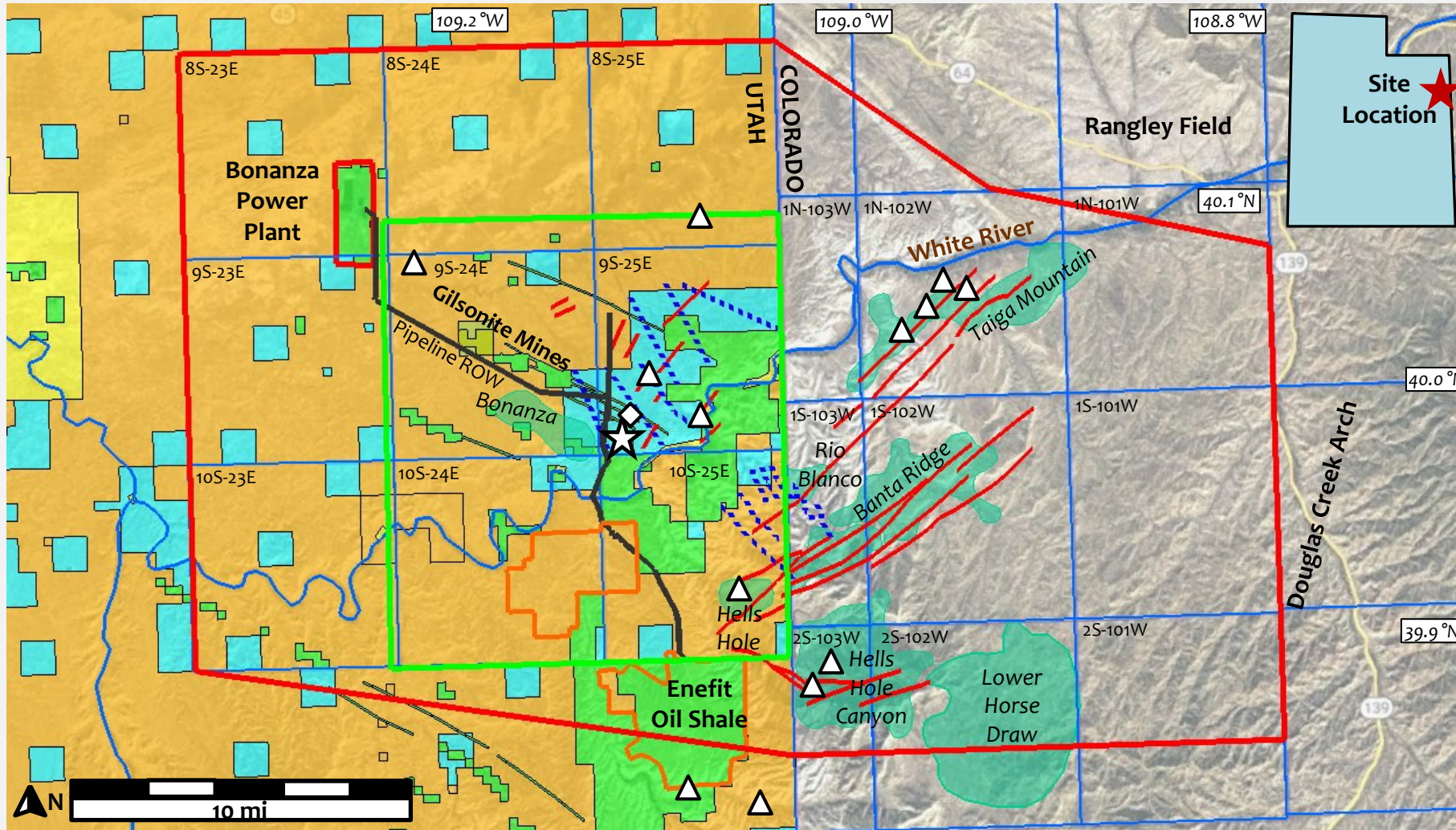
Dr. Maohong Fan

## Collaborative Institutes





# Research Site Overview



## LEGEND

CarbonSAFE PHASE II Study

— Area of Study

★ Proposed Injection Site

— CCS Storage Area

◇ Proposed Stratigraphic Well

Geological Features and Data

△ Wells with Cores / Cuttings / Logs

— Faults

— Legacy 2D Seismic Lines

Oil and Gas Operations

Oil and Gas Fields

Enefit Oil Shale Mines

Enefit Pipeline Right-Of-Way

Utah Land Ownership

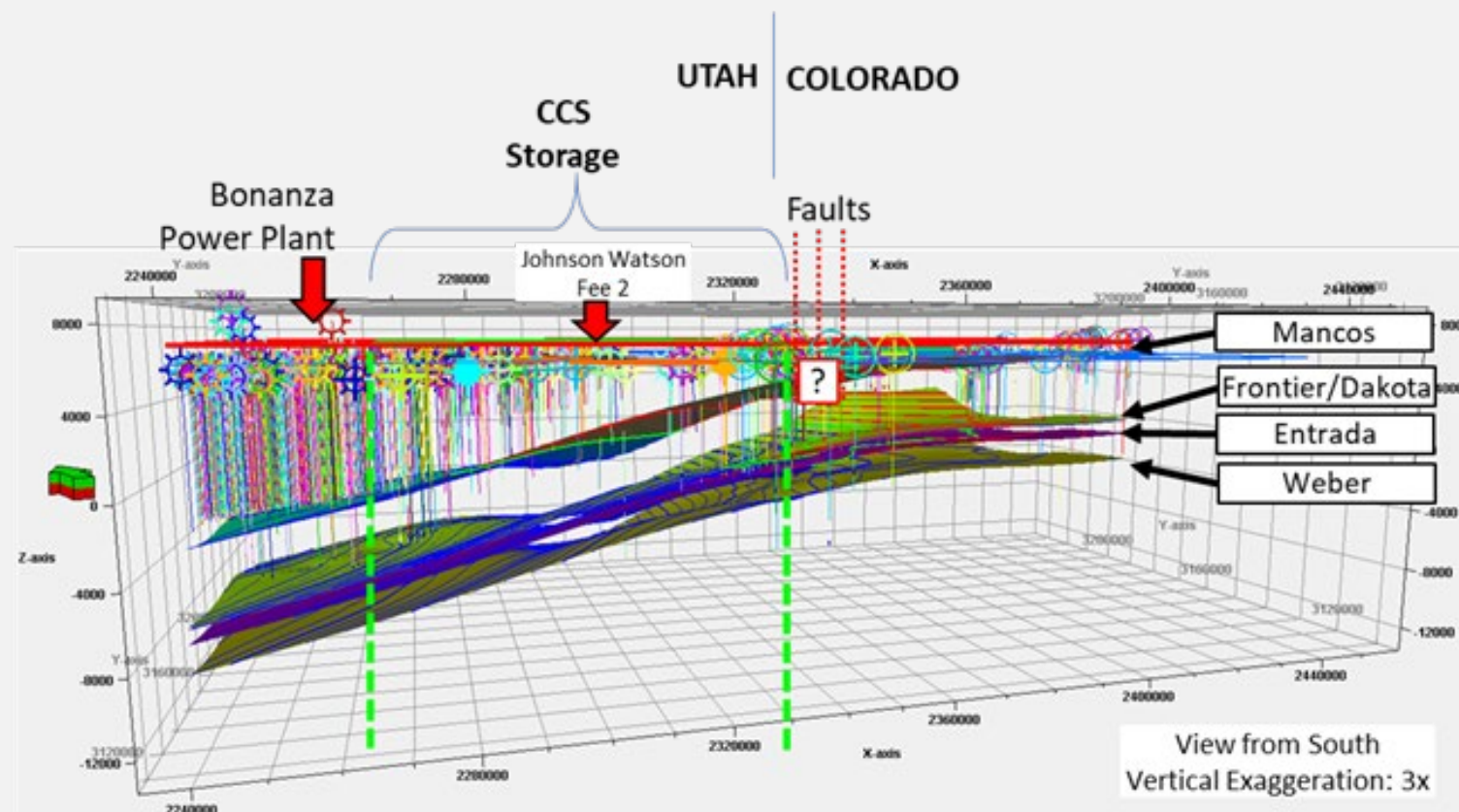
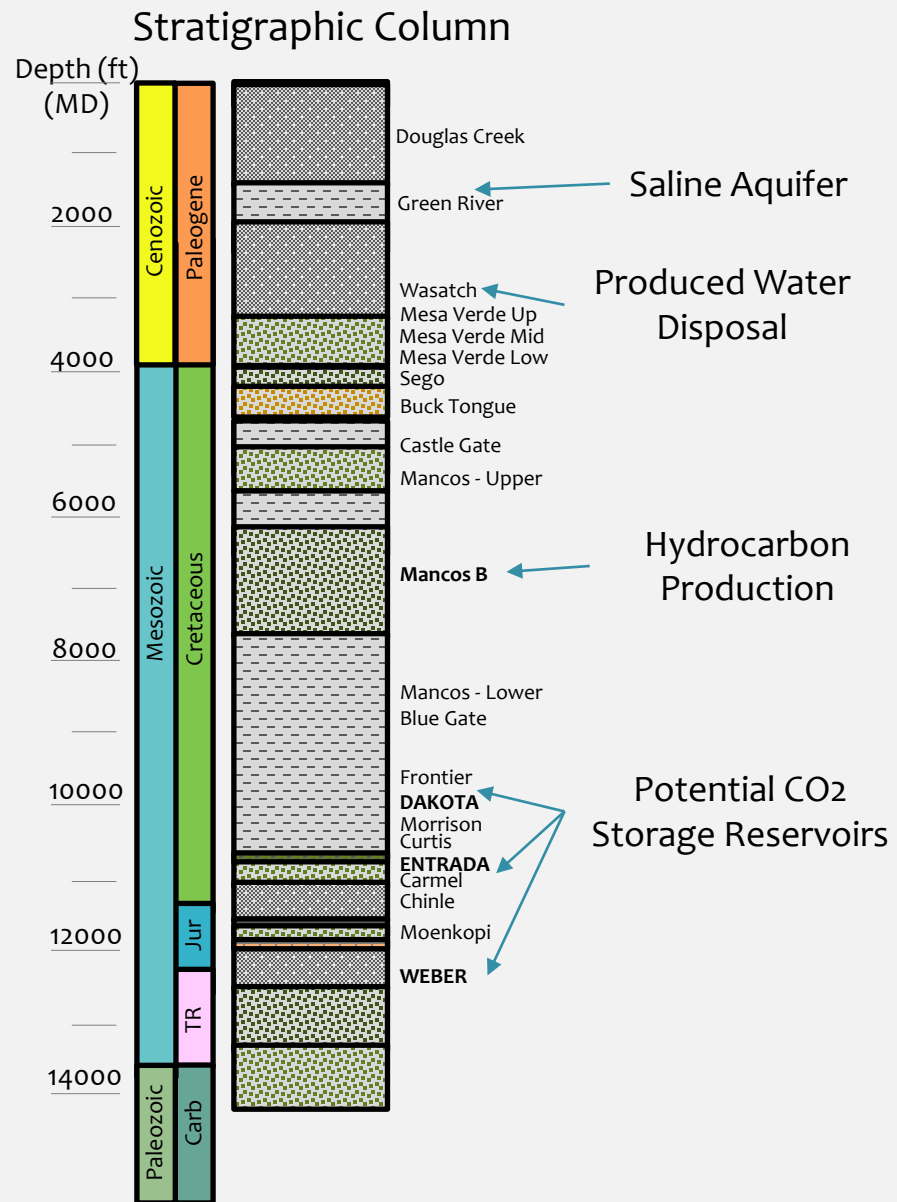
Tribal

Private

State (SITLA)

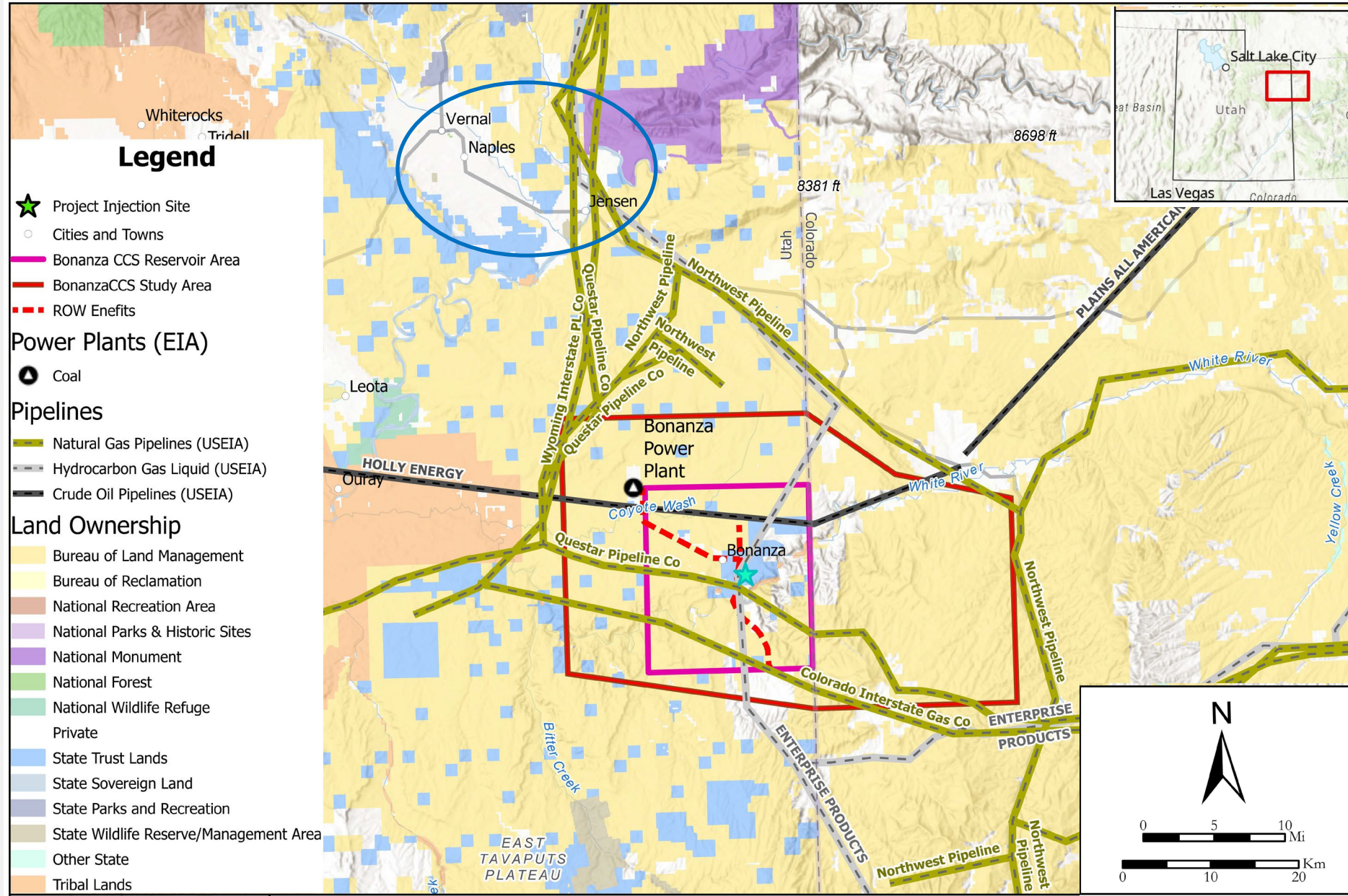
Federal

# Regional Geology





# Regional Overview



# Tasks and Leadership

## Task 1 Project Management



- Management
- Reporting
- Project Coordination



Ting Xiao



Brian McPherson

## Task 2 Community Benefits Plan



- DEIA
- Justice40
- Public Engagement
- Workforce Engagement



Erin Middleton



Rob Simmons

## Task 3 Site Characterization



- Data Evaluation
- Strat Well Drilling



Michael Vanden Berg



Carlos Vega

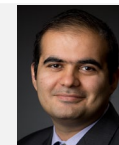
## Task 4 Modeling & Simulation



- Model Development
- Storage Capacity
- Storage Scenarios
- AoR



Nathan Moodie



Rouzbeh Moghanloo

## Task 5 Risks & Mitigation Plans



- Non-Technical Risks
- Leakage
- Induced Seismicity
- Transportation Risks
- Risk Mitigation Plans



Bailian Chen



Ting Xiao

## Task 6 CO<sub>2</sub> Management & Monitoring Plan



- CO<sub>2</sub> Management Plan
- CO<sub>2</sub> Monitoring Plan



Sai Wang



Maohong Fan

## Task 7 Subsequent Characterization & UIC Class VI Permitting Plans



- Site Characterization Plan
- UIC Class VI Permitting Plan



Michael Vanden Berg



Sai Wang

## Task 8 Technical & Economic Feasibility Evaluation



- CO<sub>2</sub> Source Viability
- CO<sub>2</sub> Transportation Options
- Economic Feasibility



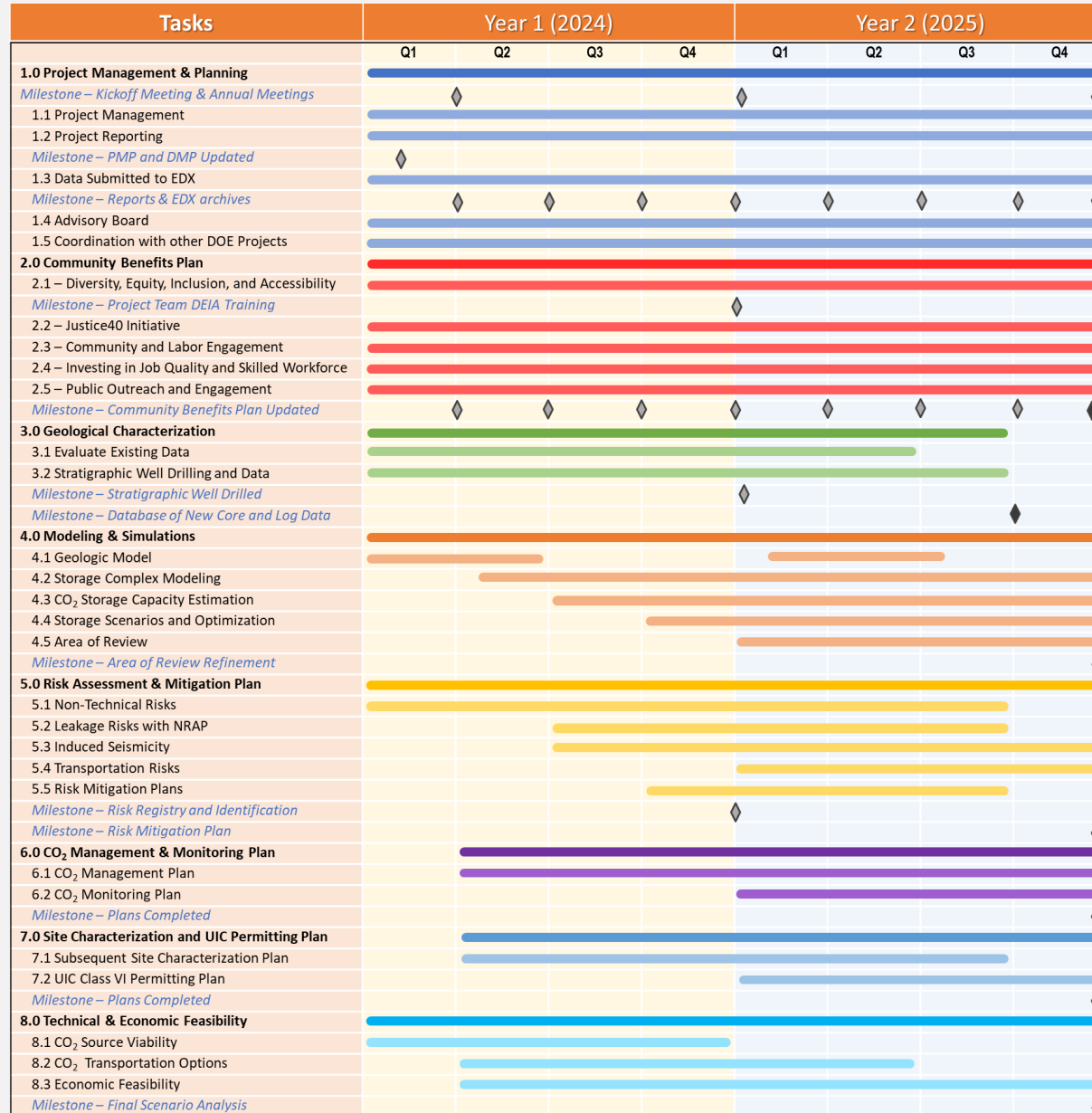
Richard Middleton



Maohong Fan



# Project Timeline



# Project Task Update

## Task 1 Project Management



- **Contracts**
  - Primary Contract with DOE – 9/29/2023
  - Subcontracts sent out on 11/14/2023
- **Reporting**
  - Project Management Plan (PMP) submitted to Project Manager on 11/16/2023
- **Advisory Board**
  - Confirming and Recruiting advisory board members

## Advisory Board Members



*Confirmed*

Richard Powell  
UIC Program Manager,  
Utah Division of OGM



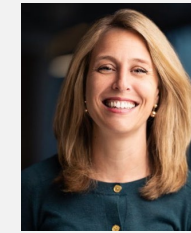
*Confirmed*

Tyler Esplin  
Sr. Engineer,  
Deseret Power



*Confirmed*

Steve Handy  
Former State Legislator,  
State of Utah



*Confirmed*

Stephanie Barber-Renteria  
Managing Director,  
SITLA



*Confirmed*

Ryan Clerico  
Chief Executive Officer,  
Enefit American Oil



*Confirmed*

Seth Lyman  
Director,  
Bingham Research Center



*Invited*

Travis Campbell  
Director,  
Uintah County  
Economic Development



*Invited*

Craig Brown  
General Manager,  
American Gilsonite





# Project Task Update



## Task 1 Project Management



### ○ Project Website

- Project website was created on 11/1/2023
- <https://egi.utah.edu/uinta-basin-carbonsafe/>

### ○ Upcoming Conference Presentations

- Uinta Basin CarbonSAFE Phase II: An Overview. 12/14/2023, AGU, San Francisco
- Geologic Carbon Storage Research in Utah: Lessons Learned from Decades of Case Studies and a Preview of New Directions. 12/14/2023, AGU, San Francisco

### ○ Upcoming Project Kick-off Meeting

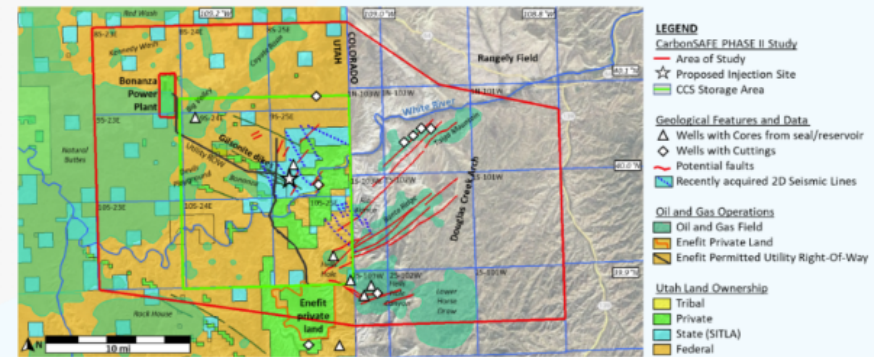
- Scheduled in late January 2024, Vernal.

## Uinta Basin CarbonSAFE

What is the Uinta Basin CarbonSAFE phase II project?

The primary objective of the Uinta Basin CarbonSAFE phase II project is to establish the technical and economic feasibility of a commercial-scale CO<sub>2</sub> geological storage complex in the northeast Uinta Basin, Utah, to sequester at least 50 million metric tons of captured CO<sub>2</sub> securely and economically from the Desert Power Electric Cooperative Bonanza Power Plant and other sources in 30 years.

This project seeks to establish feasibility of commercial storage with high-resolution societal analysis, geological characterization, technical analysis, economic evaluation, and environmental analysis. This project will accelerate the Desert Power's assessment of commercial-scale CO<sub>2</sub> capture, combine additional CO<sub>2</sub> sources in the area for a storage hub development, and accelerate economic transition and growth in the communities that have historically been impacted by fossil fuel production.



Project Sponsor: DOE and NETL



Learn more about the Carbon Utilization and Storage Partnership (CUSP) West!

### Receive news on the Uinta Basin CarbonSAFE project.

By signing up you are agreeing to receive email updates on the Uinta Basin CarbonSAFE project from EGI.

# Project Task Update

## Task 2 Community Benefits Plan



- **CBP**
  - CBP was updated in August and submitted to Project Manager
- **CBP Working Group**
  - CBP working group is scheduling a DEIA training for key personnel in December
- **Public/Labor Engagement**
  - A presentation on the Uinta Basin Oil & Gas Collaborative, 11/8/2023





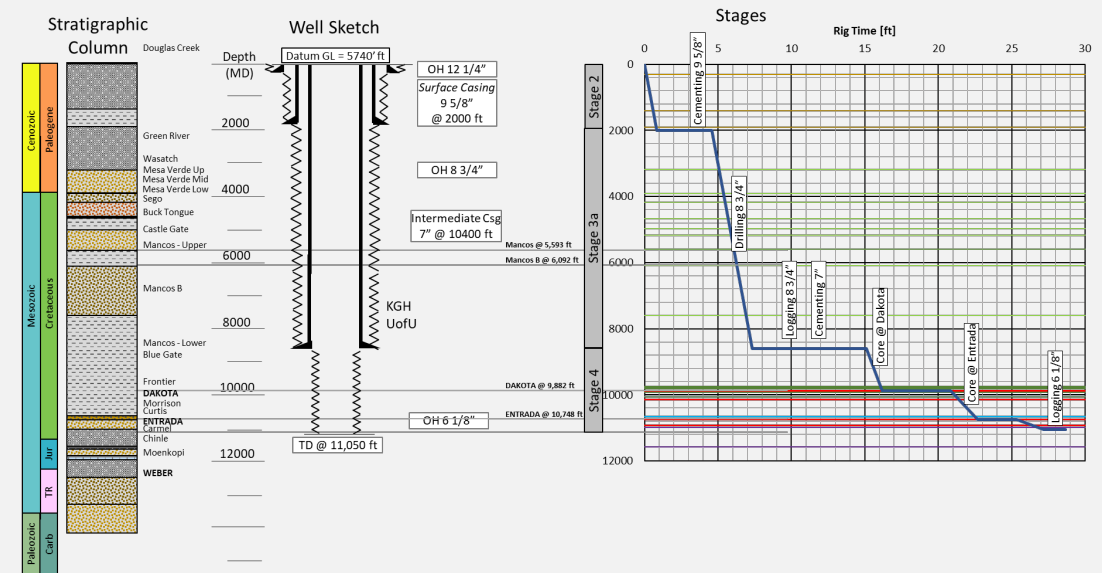
# Project Task Update



## Task 3 Site Characterization

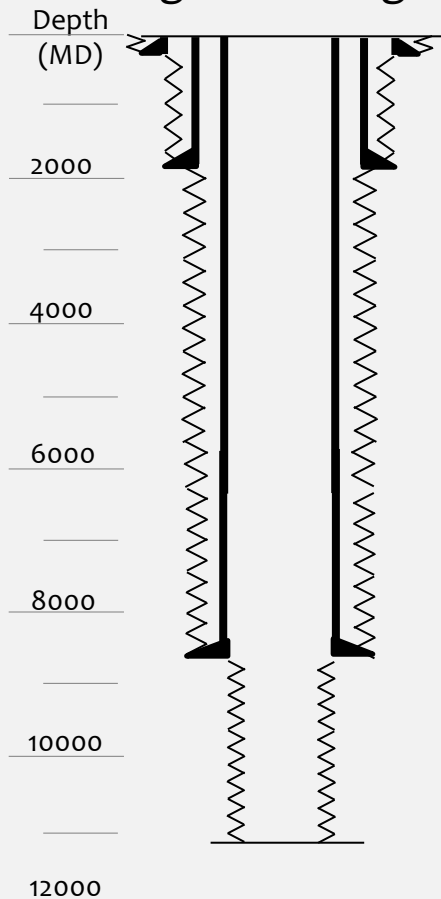


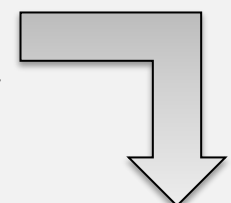
- **Evaluating Existing Data**
  - The team is working on collecting data for geo model update and summarizing the available data for simulations.
- **Drilling a Stratigraphic Well**
  - The team is evaluating the drilling experiences in the basin and contacting potential vendors for drilling cost in detail.



# Next Step

## Stratigraphic Well Design & Drilling



- 
- More geology data
  - Model refinement
  - Updated simulation results
  - Collaborations and engagements with stakeholders
  - Better evaluation of feasibility
  - Better planning



# Contact Information



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- <https://egi.utah.edu/uinta-basin-carbonsafe/>

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