

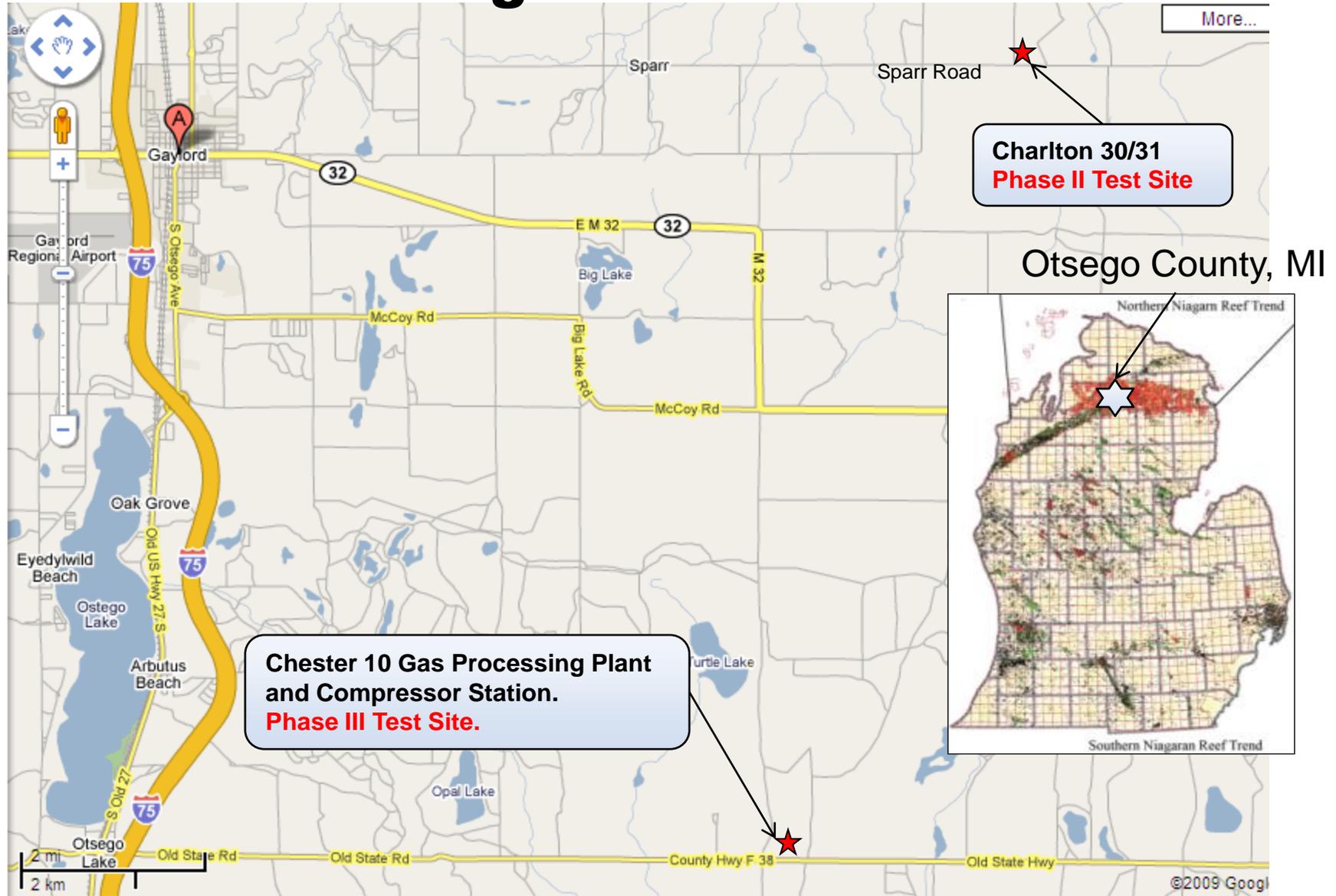


Phase III Development Phase Injection Test

**RCSP Annual Meeting
Pittsburgh, PA
October 5, 2010
David Ball**



Our proposed Phase III site is near our Phase II Michigan Basin site





Phase III Site Synopsis

- **Location:**
 - Chester Township, Otsego County MI
- **Injection Target:**
 - Primary target is St. Peter Sandstone
 - Additional and/or backup target is Bass Island/Bois Blanc
- **Injection Goal:**
 - 1 million metric tons of CO₂
 - Approximately four years of injection
- **Source of CO₂:**
 - Processing of natural gas from Antrim Shale
- **Key Local Participants:**
 - DTE Energy, Core Energy, Western Michigan University
- **Permitting:**
 - UIC: EPA Region 5
 - Drilling and surface use: Michigan Department of Natural Resources and Environment



Why did we select this site?

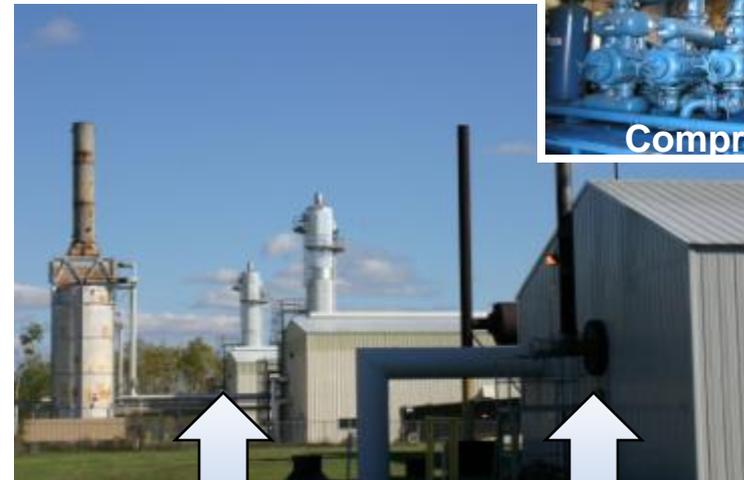
- Source of CO₂ with infrastructure for supporting injection.
- Proven track record with infrastructure and hosts, DTE and Core Energy.
- Geological targets exemplary of the region with the capacity for supporting million tonne test
 - St. Peter, primary target, second only to Mt. Simon as regional deep saline reservoir
 - Bass Islands/Bois Blanc, possible additional reservoir proven in successful Phase II test and of regional interest
- Area has a history of gas and oil production
 - Proven vendor network
- Area is remote with industrial base. Little public concern expressed to date
- Good permitting relationships (EPA Region 5 and Michigan DNRE)

Otsego County test area is remote – but has strong oil and gas base

Combination is well suited to
Phase III test in addition to
geological considerations



Phase II Well Site

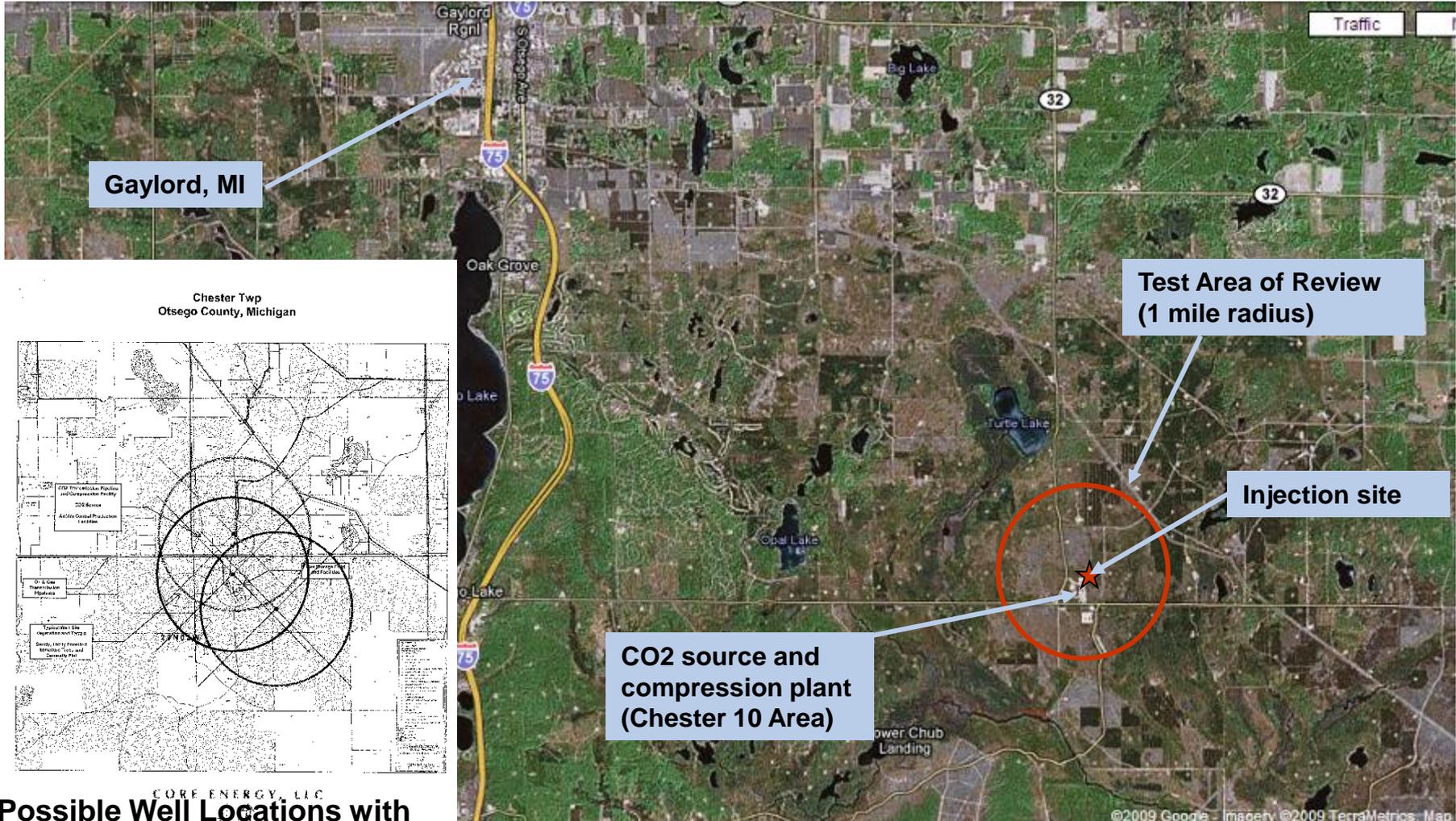


Gas Processing Plants



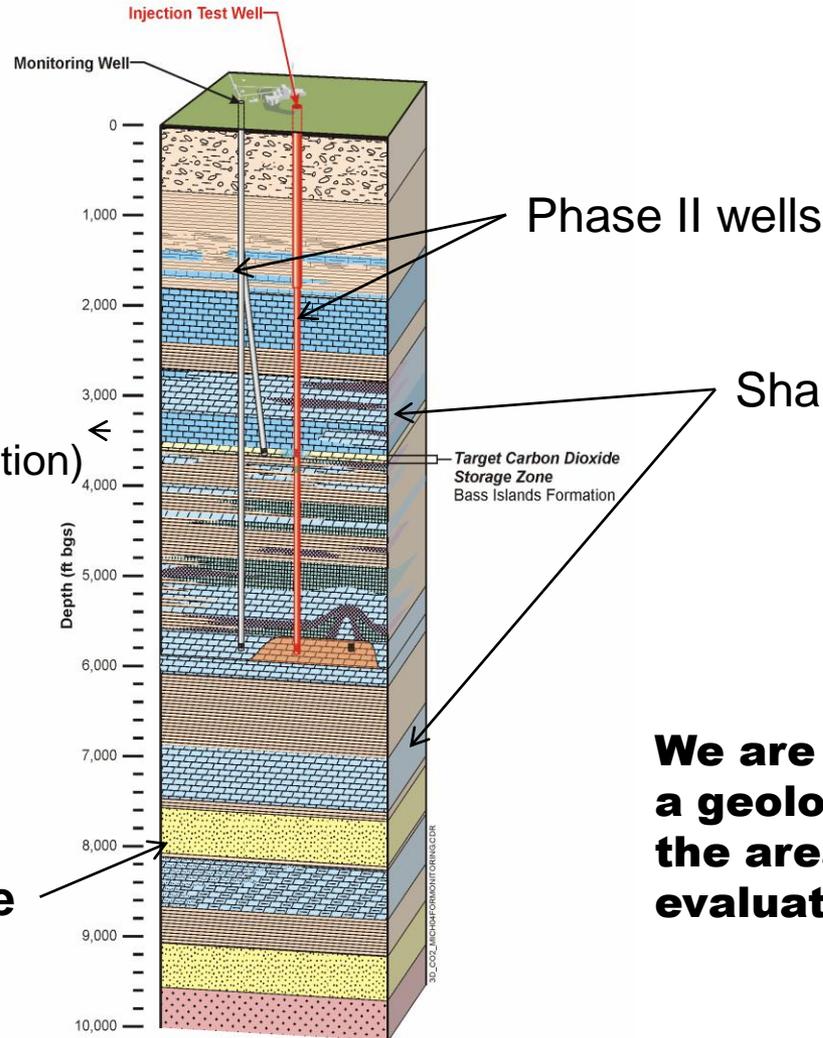
Compressor Building

Probable Area of Review is contained on state land and is well away from populated areas



Possible Well Locations with AOR of 1 mile within state land

The primary target formation for the Phase III test is the St. Peter sandstone



Bass Islands
(Additional/backup formation)

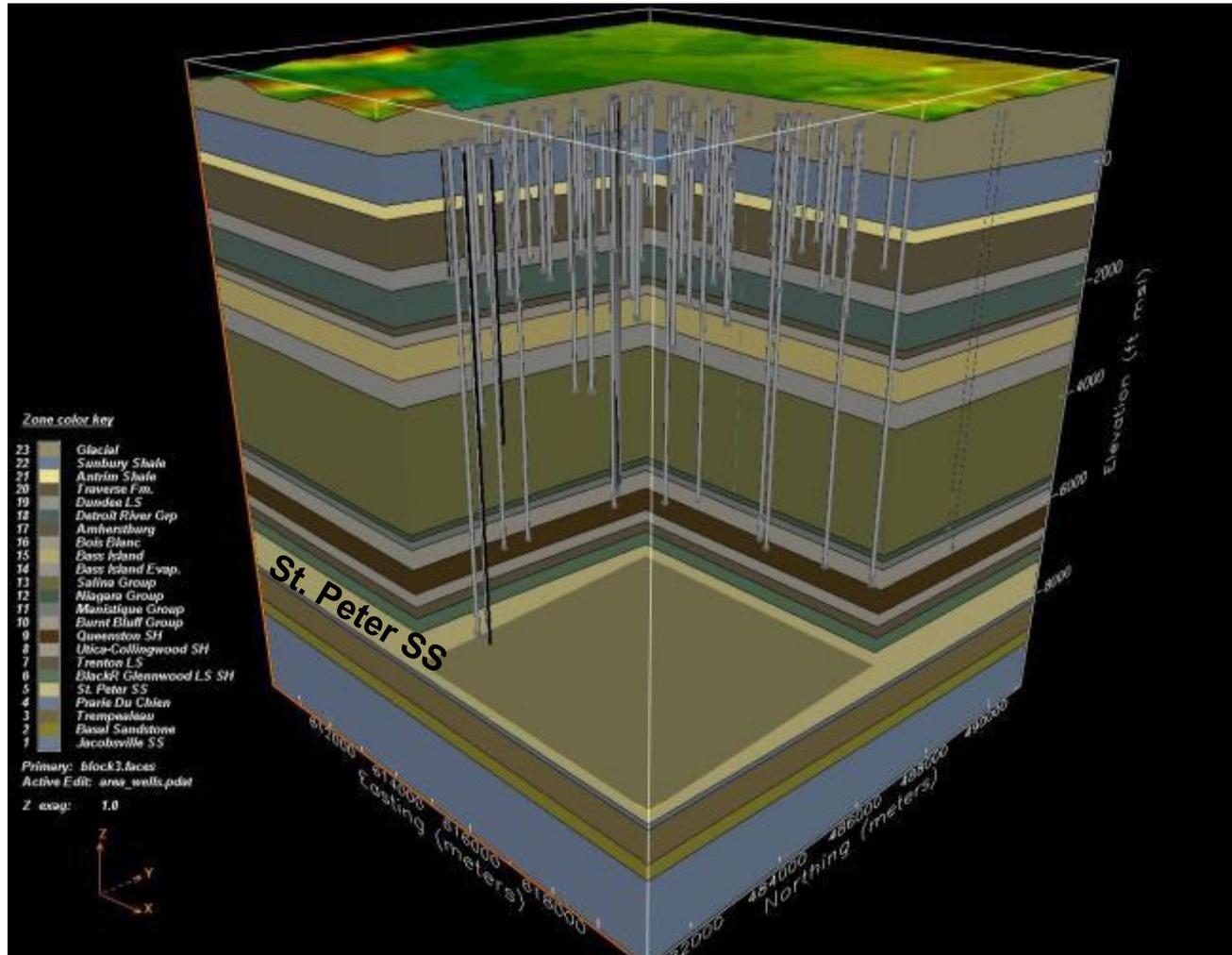
St. Peter Sandstone

We are currently completing a geologic assessment of the area which will include evaluation of seismic data.

NOT TO SCALE
ALL LOCATIONS ARE APPROXIMATE



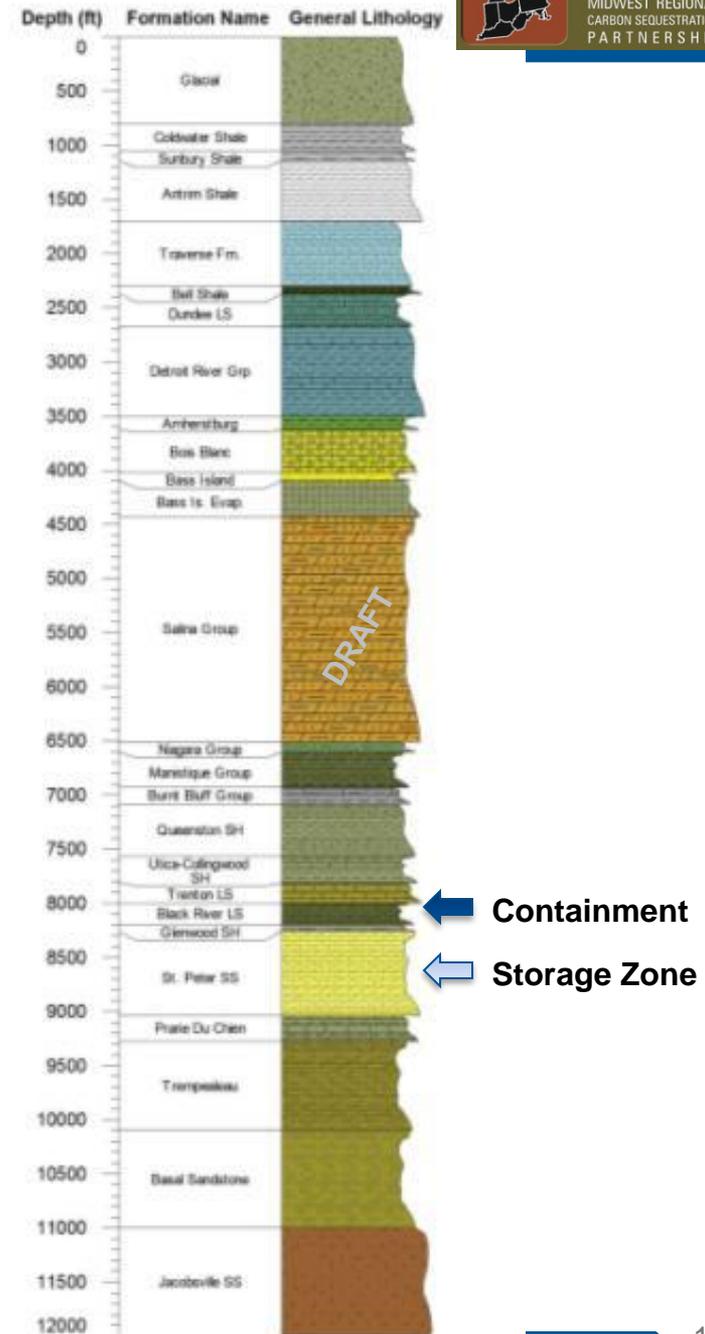
Many wells in the proposed injection area, but, few penetrate the St. Peter



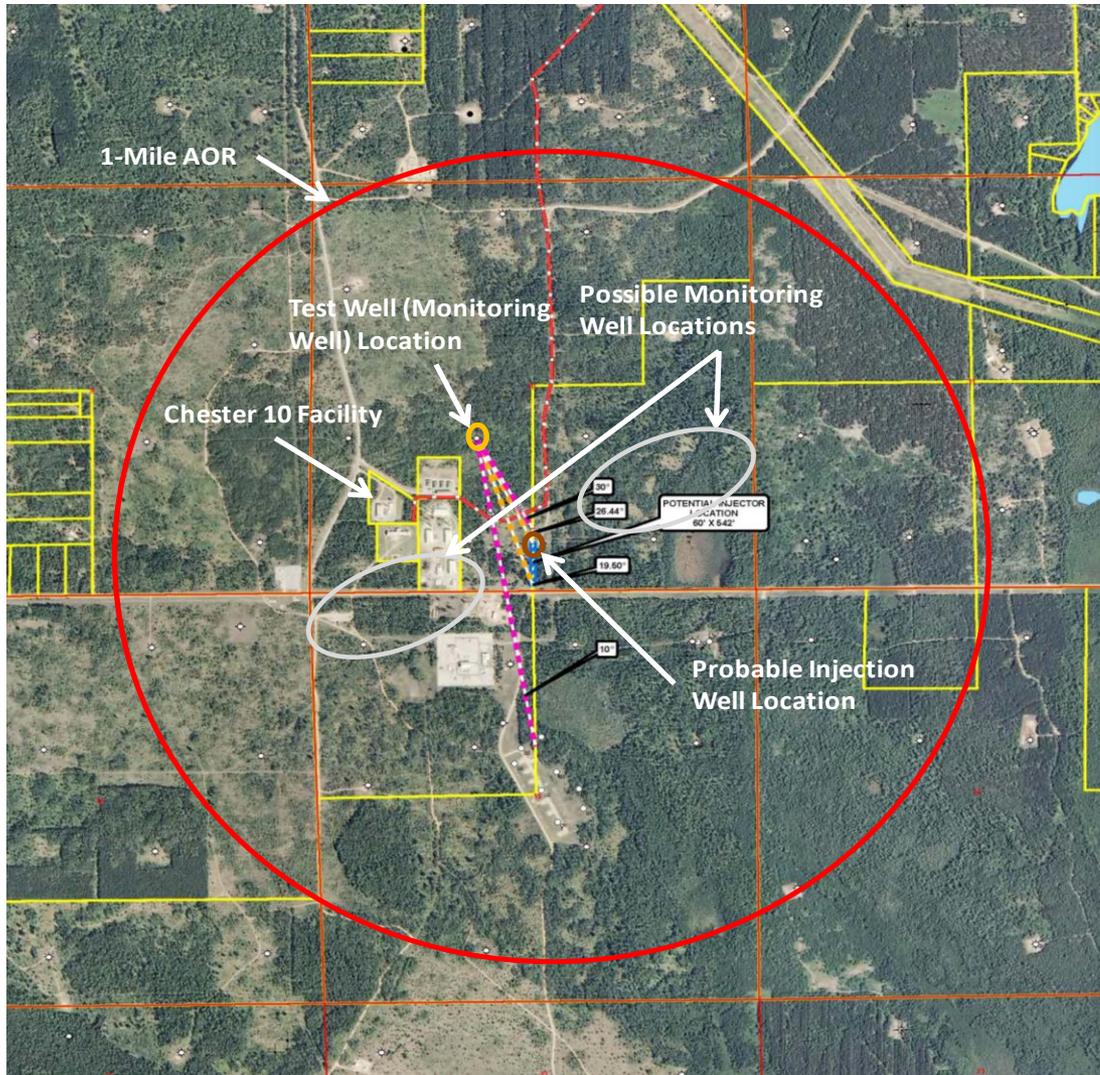


Geological Prognosis

- Regional trends and nearby well logs were reviewed to estimate stratigraphy at the proposed site.
- St. Peter Sandstone, the primary storage zone, is at a depth of ~8261-9040 ft. at this location.
- Containment layers include Glenwood Shale, Black River Limestone, and Trenton Limestone.
- Additional containment is provided by the Utica-Queenston Shale.
- Bass Is. Dolomite is a possible additional injection zone.



Probable Well Locations



Test/Monitoring Well Site



Possible Injection Well Site

Outreach

- We are capitalizing on Phase II presence in the area and relationships developed over the past several years
- Hosts/Partners (DTE, Core Energy, WMU) play an important role in making contacts
- Initial tier of contacts involved key stakeholders
 - MDNRE and EPA Region 5
 - Federal and State legislators
 - Governor's Office
 - Key stakeholders in the Traverse City, Gaylord area
 - Selected environmental group leaders
- Our plan going forward includes reaching out to the educational community and other stakeholders

Thus far the response to our outreach efforts has been positive.

FEP Risk Screening

- **Preliminary risk screening completed:**
 - Features, Events, and Processes (FEP) performance and safety screening to identify possible risk items.
 - Activity based analysis used to identify leakage pathways and other risks to receptors in the area.
 - Initial risk matrix prepared.
- **Preliminary Conclusions:**
 - No FEP items significantly affect proposed project.
 - Existing boreholes are a potential risk pathway present in the area. However, most do not penetrate the St. Peter.
 - Some risk pathways need to be better defined with site characterization.

Activity Based Analysis

- Node 1: Pre-Drill Planning
- Node 2: Drilling / Monitoring Injection Well
- Node 3: Well Completion
- Node 4: CO₂ Pipeline Transport
- Node 5: Injection
- Node 6: Site / Well Closure
- Node 7: Post Injection Containment
- Node 8: Project Management
- Node 9: Maintenance and Workover Programs

Schedule

