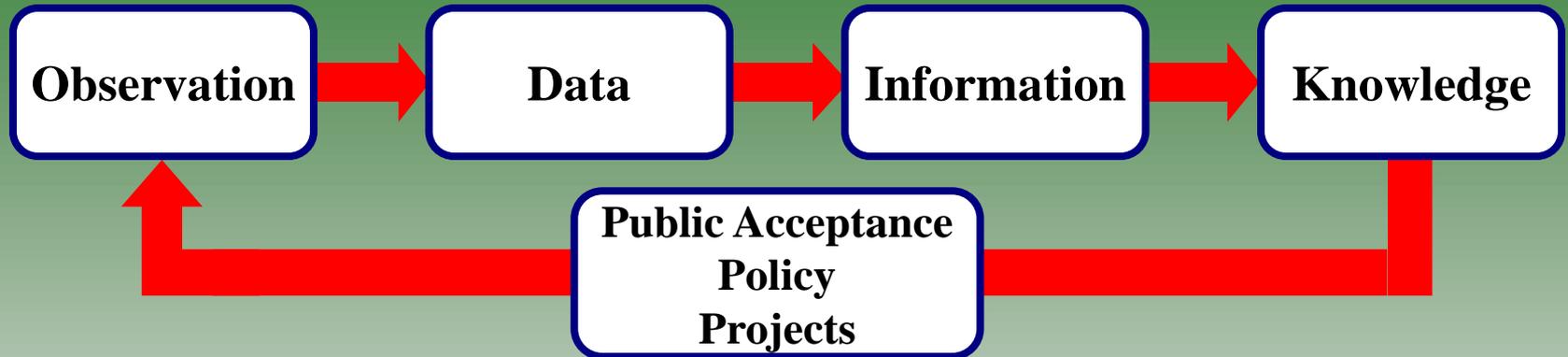




Developing a Carbon CyberInfrastructure

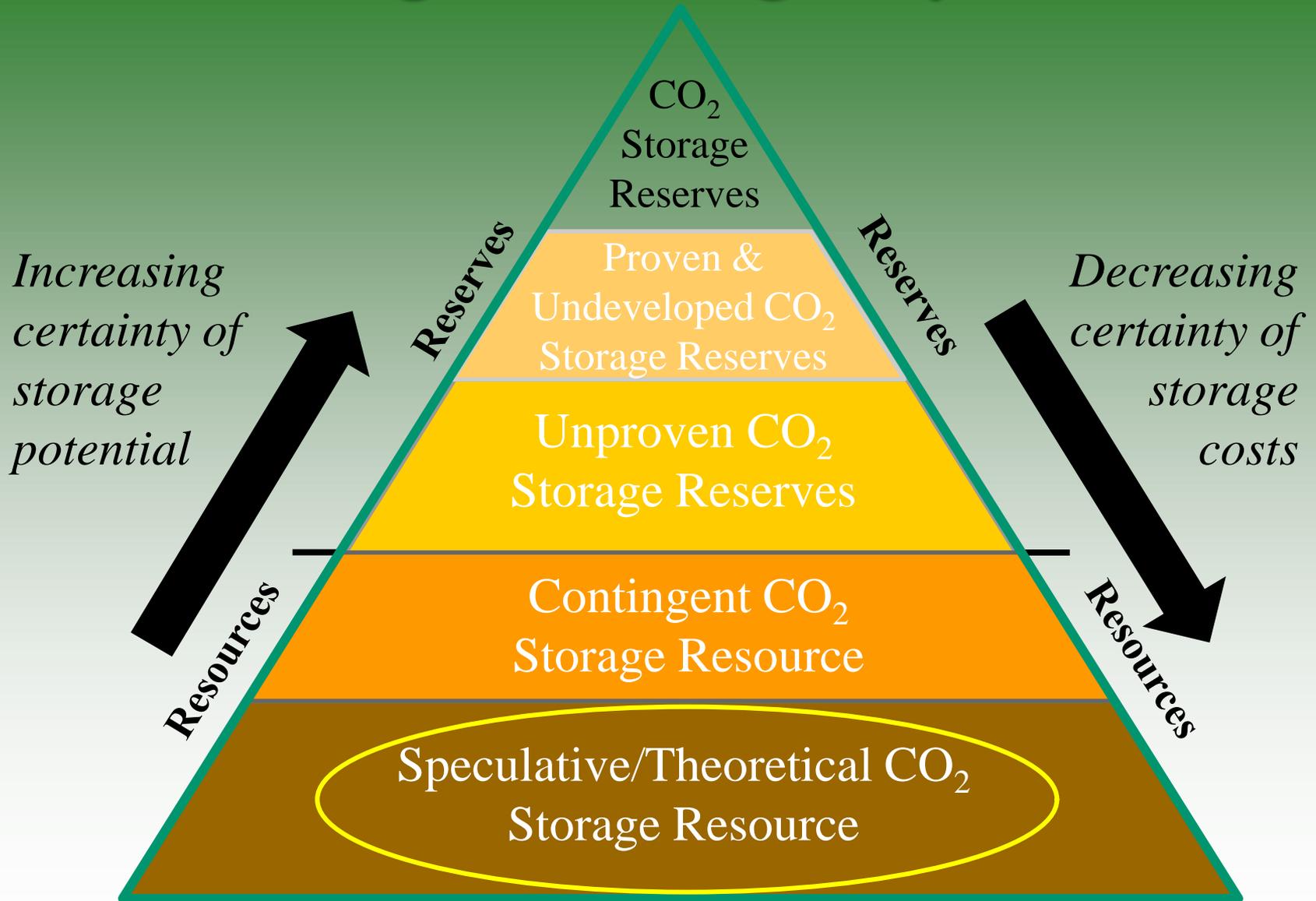
Timothy R. Carr

Challenges in CCS Learning Process

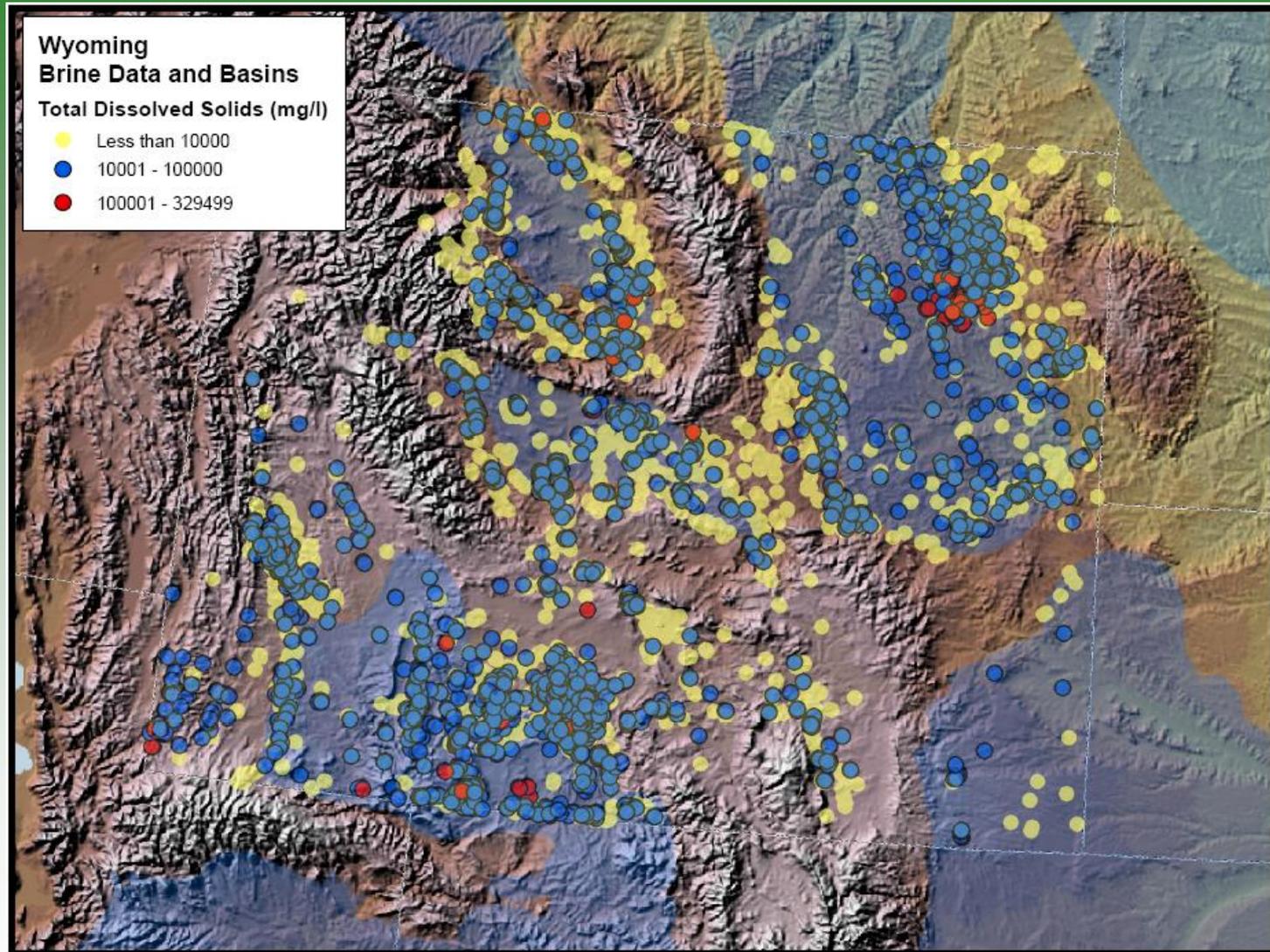


- Sharing Exponentially Increasing Amounts of Data
 - Heterogeneity of data, software and hardware
- Lack of Tools Dealing with Voluminous Data Sets
 - Organizing, Storing, Preserving, Retrieving, Browsing, Processing & Visualization
- Need for Time Critical Learning
 - Temporally Obsolete Knowledge for Time-Critical Applications
 - Allocation of Computational and Networking Resources
- Conduct Analyses at Regional to Global Spatial Scales
- Curation of Data and Preservation of Scientific Analyses
- Learning Process as a Collaborative Process
 - Teams, Agencies, Communities & States

Geologic Storage Pyramid

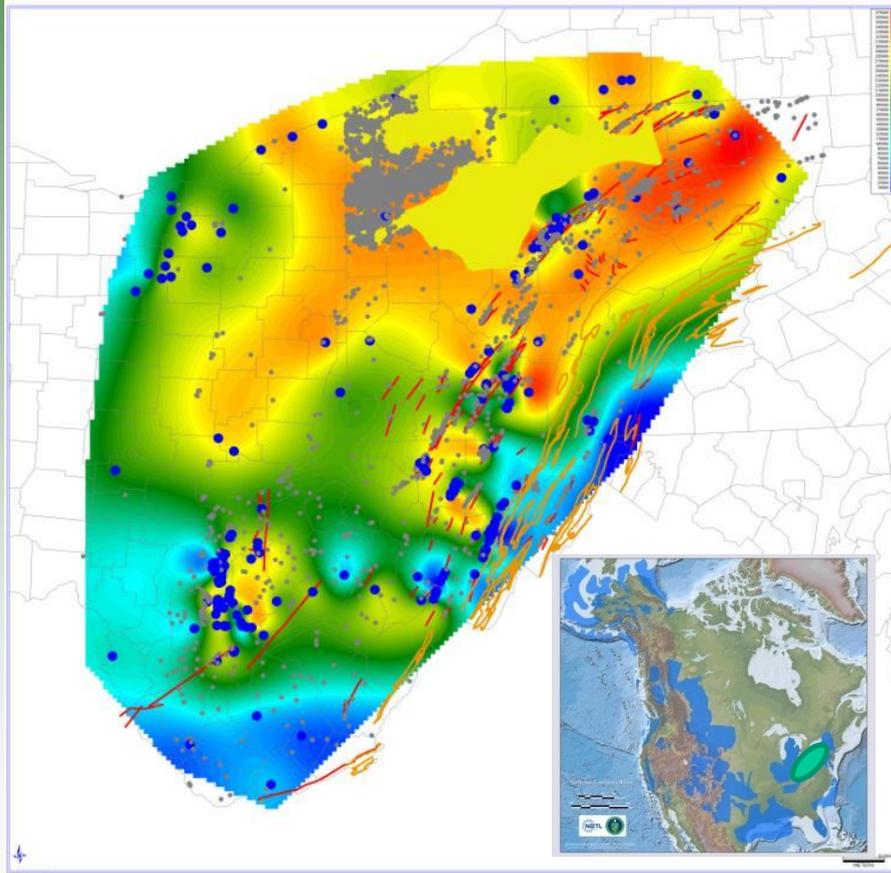


Custom Maps

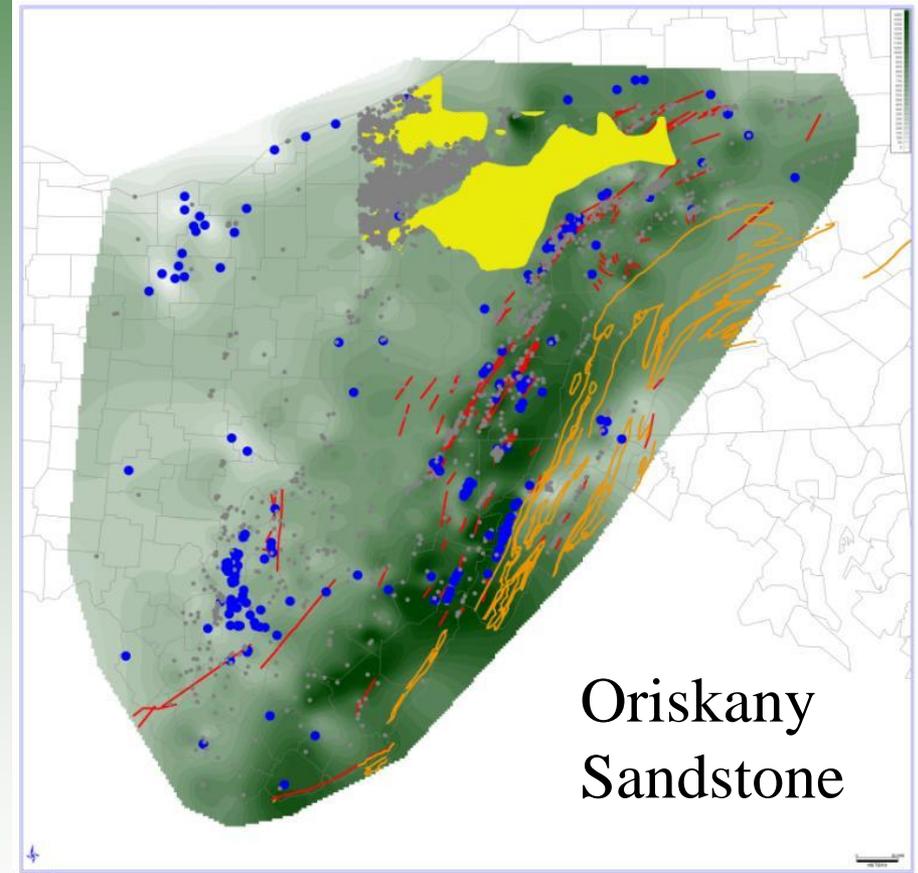


Custom Maps

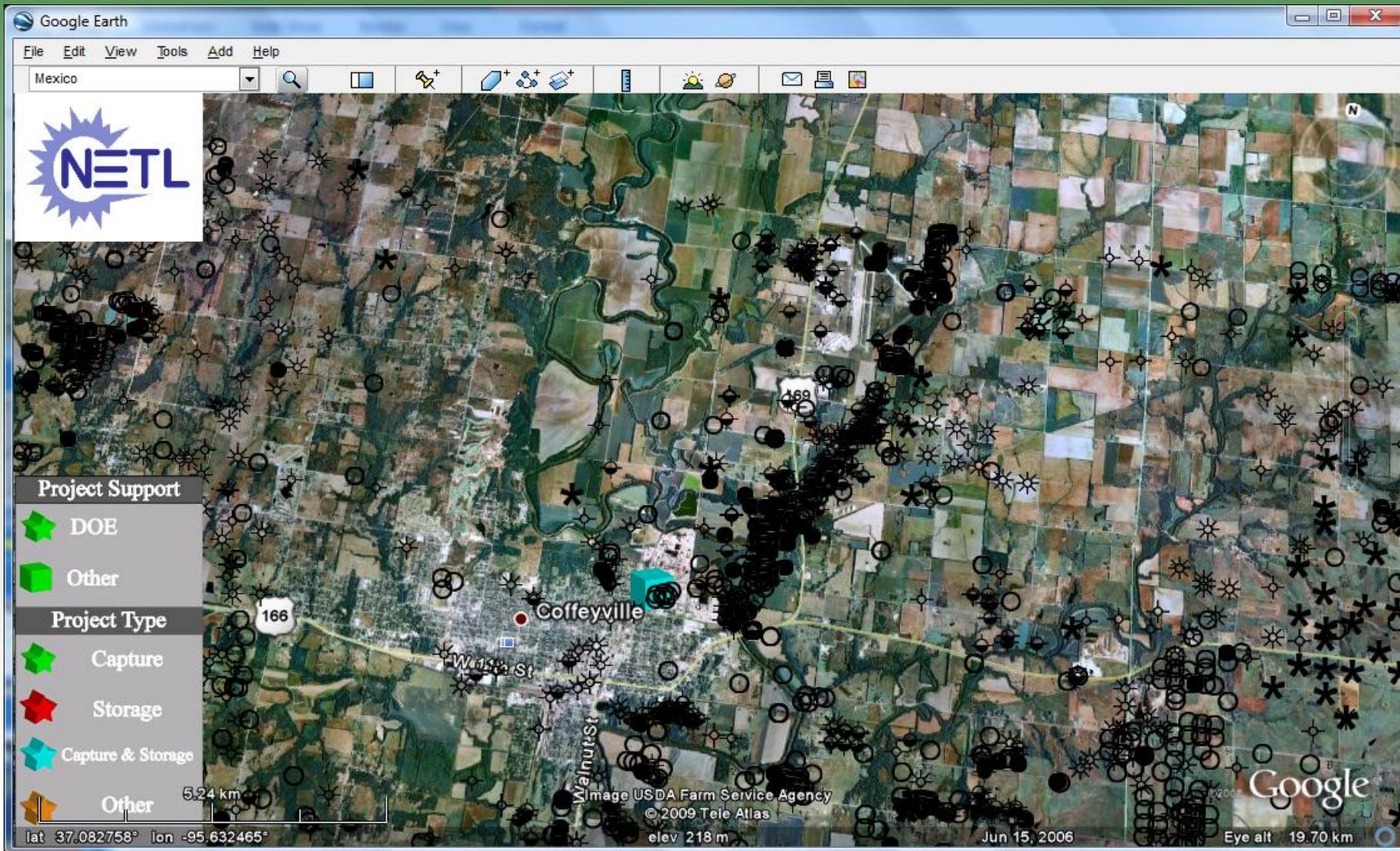
Salinity



Hydraulic Head



Carbon Cyberinfrastructure CCI-2.0



Carbon Cyberinfrastructure CCI-2.0

The image shows a composite view of a Google Earth interface on the left and a web browser window on the right. The Google Earth window displays an aerial view of a residential area with a legend for project support and types. The legend includes categories for Project Support (DOE, Other) and Project Type (Capture, Storage, Capture & Storage, Other). The web browser window shows the URL <http://bluesource.com/4e-coffeyville.html> and the content of a page titled "Coffeyville". The page features a navigation menu, a header image, and two columns of text under the heading "Carbon on the Move in Coffeyville Kansas".

Project Support

- DOE
- Other

Project Type

- Capture
- Storage
- Capture & Storage
- Other

Blue Source Home | About Us | What We Do | Success Stories | News & Information | Contact Us

Coffeyville

Success Stories

- J.B. Hunt
- Blue Lake
- Val Verde
- Big Canyon Ranch
- Coffeyville

Carbon on the Move in Coffeyville Kansas

Coffeyville Resources Nitrogen Fertilizers produces the lowest-cost, highest quality nitrogen fertilizer in North America - and also produces thousands of tons of CO₂.

Located in Southeast Kansas, Coffeyville Resources is an independent petroleum refiner and marketer of high value transportation fuels in the mid-continental U.S. and, through a limited partnership, a producer of ammonia and urea ammonia nitrate, or UAN, fertilizers. At current natural gas prices, CVR's nitrogen fertilizer business is the lowest cost producer and marketer of ammonia and UAN in North America.

This process of creating nitrogen fertilizer involves the gasification of the petroleum coke to make synthetic natural gas for use in the production. This process creates CO₂, some of which is used in the manufacturing of the fertilizers, but approximately 40,000 Mcf/d of CO₂ is vented into the atmosphere.

Blue Source is working with Coffeyville Resources to permanently sequester this excess CO₂ in oil fields in Oklahoma and Kansas. This sequestration process will transport and permanently inject the CO₂ in geologic formations where it will remain for millions of years. This injection of CO₂ enables local oil producers to recover another 10% - 15% of the oil that would otherwise be left behind, thus

lat 37.049444° lon -95.602194° elev 219 m JUN 15, 2006 Eye alt 3.92 Km

West Virginia Carbon Sequestration

Novell WebAccess (Tim ... x) West Virginia Carbon Seq... x

http://www.wvcarb.org/

Novell WebAccess Comcast.net Home MapQuest Maps - D... The New York Time... Business News, Fina... National Weather Se... IceWarp Web Mail Other bookmarks

West Virginia Carbon Sequestration

Impetus & Challenges Technical Background Carbon Capture & Storage WV Storage Potential Evaluation Tools

Carbon Sequestration, Coal to Liquids, and the future of carbon in West Virginia.

Coal is uniquely positioned to be an integral part of a transition away from petroleum-based fuels. West Virginia, with substantial coal reserves, abundant water, an established energy infrastructure and a trained workforce, is in a position to capitalize economically on the coal-to-liquids technology (CTL). West Virginia's goal is to displace 1.3 billion gallons of imported oil annually by 2030 through use of indigenous fuels. Building five CTL plants could meet WV's goal.

CTL plants could be a large contributor - a 20,000 barrel per day CTL plant could produce 300 million gallons of clean diesel and other transportation fuels each year. A 20,000 barrel per day plant would require 3.6 million metric tons of coal a year (roughly 900,000 metric tons of coal per year is required for each 5,000 barrels per day capacity increment for a CTL plant). Providing the coal to support five CTL plants would increase the State's annual coal production by 15% from current levels.

<http://www.wvcarb.org/>

Characterization Cyberinfrastructure

- Demonstrate Linkage between NatCarb and Regional Projects
 - November 30 Milestone
- Designate GIS/DB Contact
 - February 15
- Develop Initial Mapserver/GoogleEarth Link to Projects
 - March 15

Characterization Cyberinfrastructure

- Develop Regional Layers to Load into NetCarb
 - Variable Dates
- Discuss Database Links for Data Generated by the Various Projects
- Goals
 - ✓ Show National Impact of the Program
 - ✓ Provide Method to Transfer Results
 - Public
 - Other Technical Users