

Oklahoma Geological Survey: Oklahoma's NLIC Stakeholder Workshop

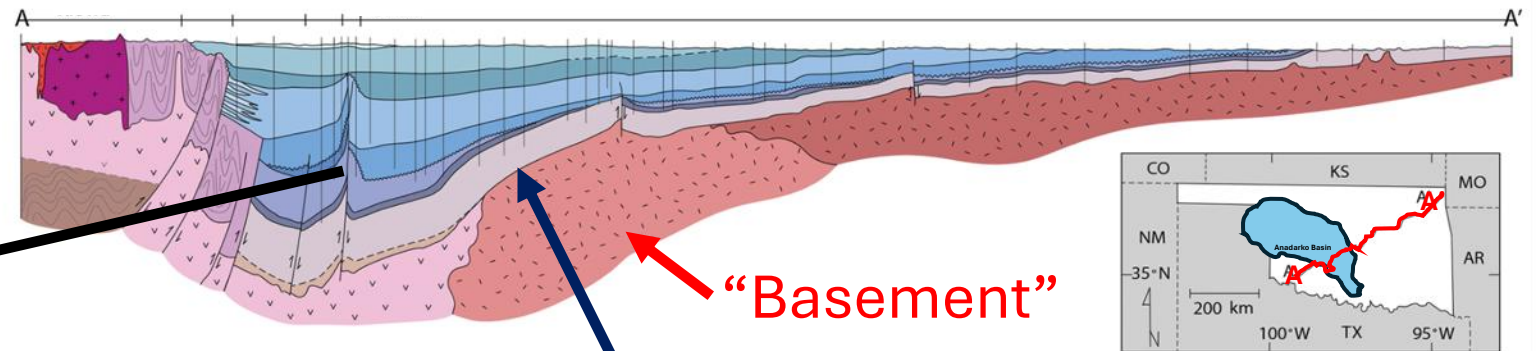
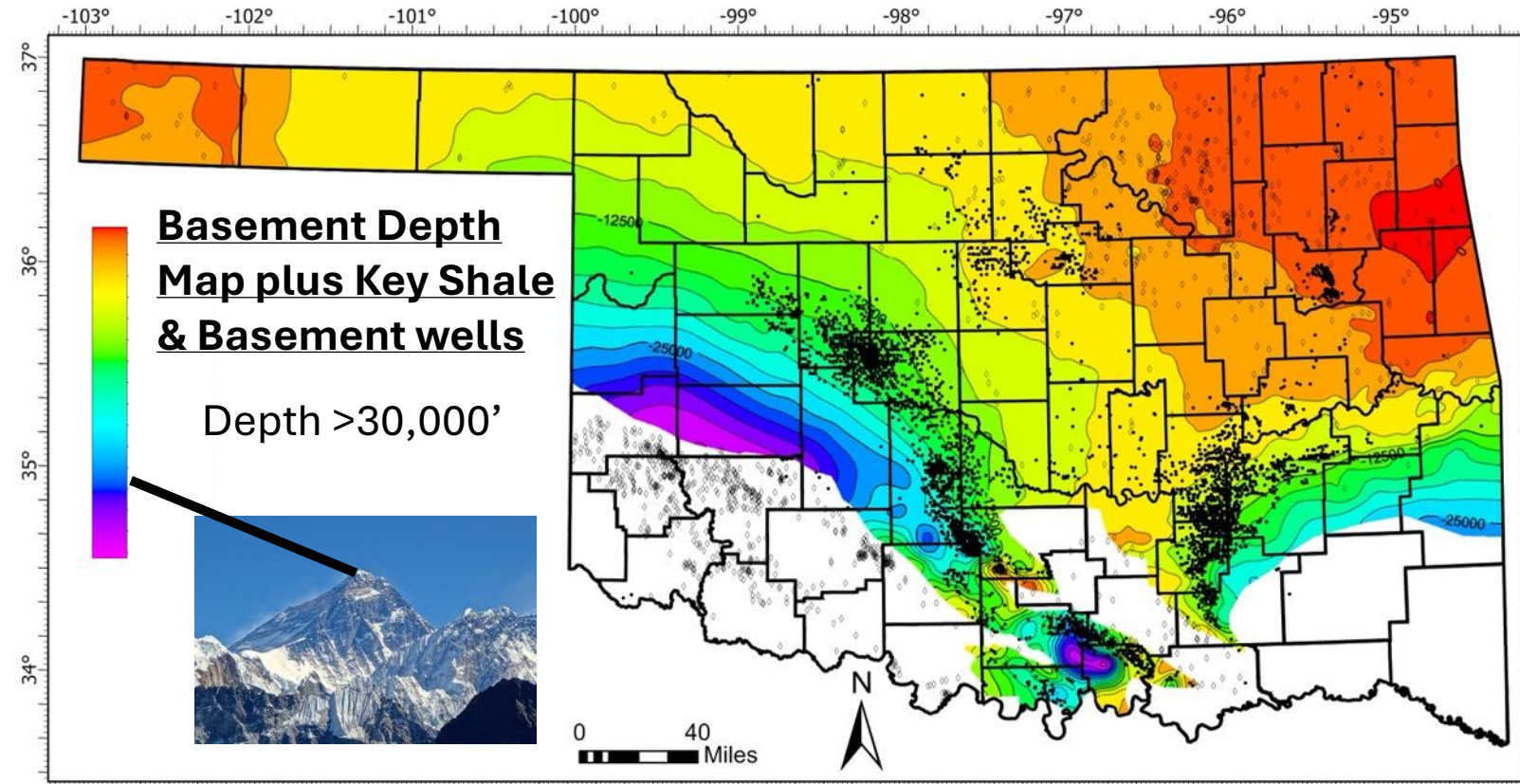
- Dr. Nicholas W. Hayman, State Geologist, hayman@ou.edu

- Oklahoma Geological Survey (OGS) is a science & information state agency in the University of Oklahoma
- Collaborates w/ state & federal agencies: monitor & mitigate subsurface hazards
- Massive dataset on subsurface geology from >100 years of oil & gas activity



Oklahoma Geology:

- It's a BIG DEAL
Underground...
- Sedimentary rocks cover the “Basement” (often referred to as “granite”)
- Well penetrations of deep, key shale formations ~ central OK & basement wells in southwestern OK.

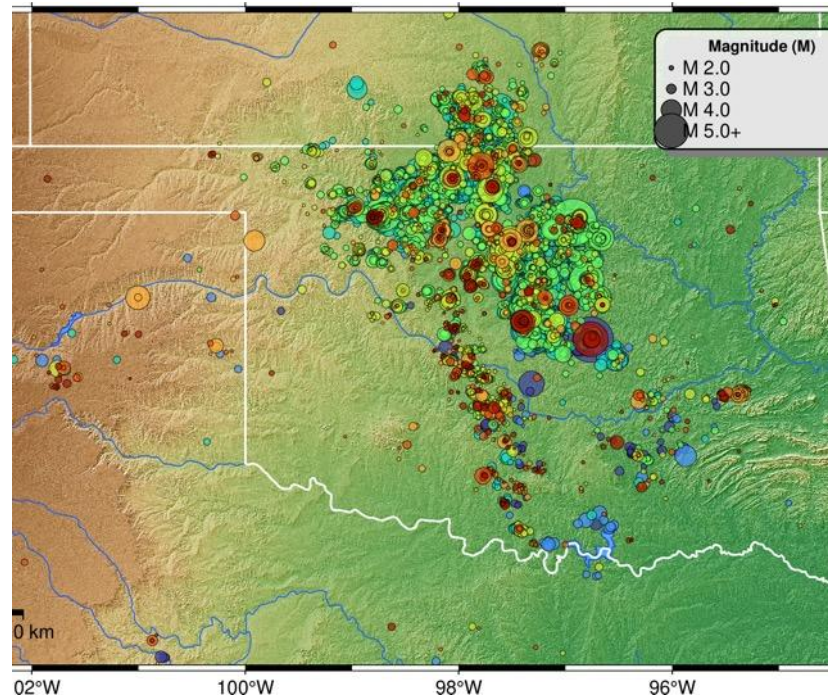


“Basement”

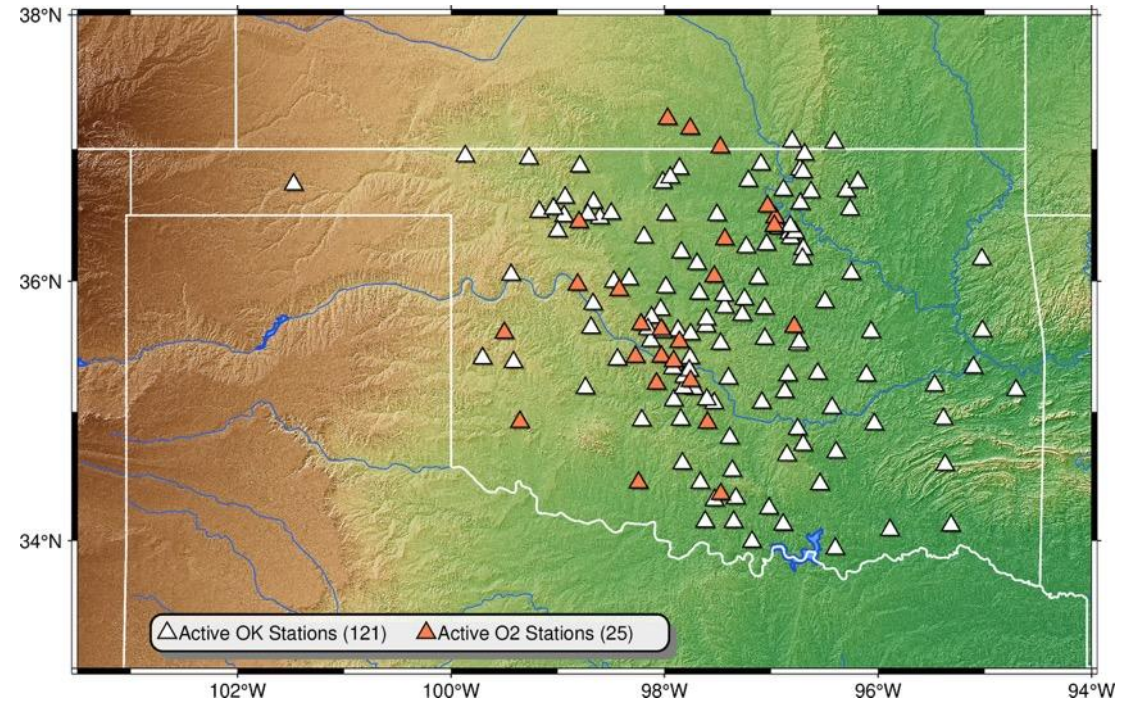
“Sedimentary Cover”

Oklahoma's Monitoring & Mitigation Capacity

Earthquakes >2, 2010-2025

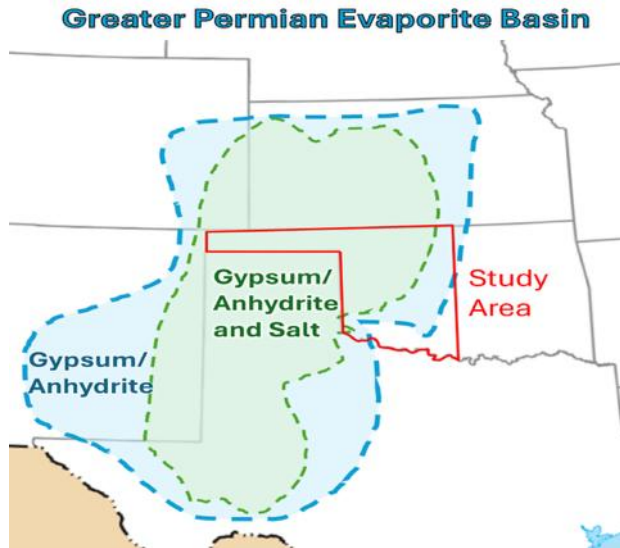


Oklahoma Seismic Network

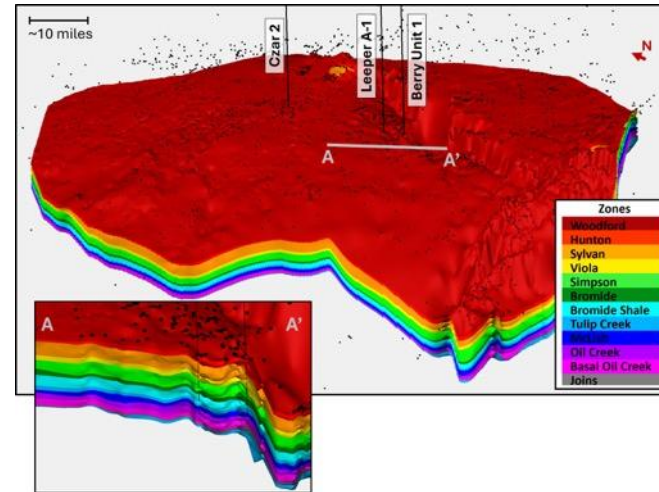


- Earthquake distribution is partly controlled by geology, partly by industry activity
- State response to industry-linked earthquakes led to overall reduction
- State investment of \$4M (2024-2026) to upgrade the seismic network

Oklahoma Geological Survey: Resources (Final Slide)

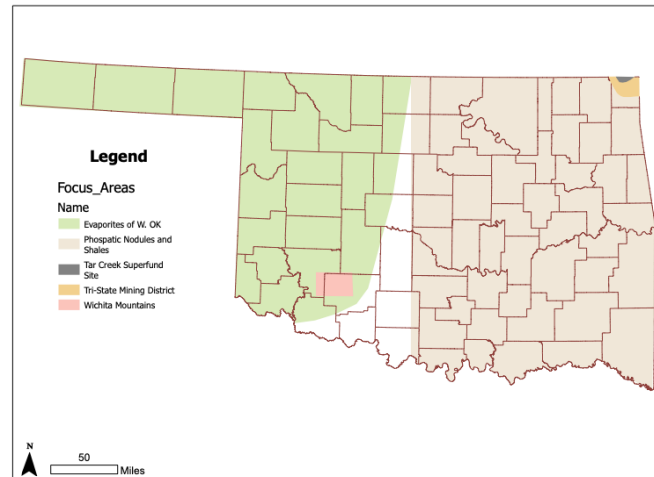


Current: U.S. Geological Survey Earth-MRI evaluation of critical minerals



Facilities: Rock characterization to facilitate Oklahoma energy programs, inc. the state data and core repository

Legacy studies: early 1980's geologic salt distribution for nuclear waste disposal



Geomodeling & Simulation: recent DOE projects & partnerships with industry

MICROANALYSIS LAB



The OGS offers a variety of analytical facilities to provide high quality rock measurements from micro to macro scale.



PETROGRAPHY LAB
Optical and Fluorescence Microscopes
Visualization of pore types, microfractures, mineralogy, and organic matter distribution



ENERGY GEOSCIENCE LAB



HAWK Pyrolysis, Total Organic Carbon, and Carbon Content Analyzer
Integrates pyrolysis, total organic carbon (TOC), and carbonate carbon (CC) measurements to quantify organic matter abundance and composition in rock samples

Visit: **OGS.OU.EDU**

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