

Federal focus on Minerals Research- Benefits to New Mexico

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Resources



Critical Minerals

- Non-fuel mineral or mineral material essential to the economic or national security of the U.S. and which has a supply chain vulnerable to disruption.
- Serve an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economy or national security.

Federal Focus on Critical Mineral Resources

- United States Geological Survey (USGS)
- Department of Energy (DOE)
- National Science Foundation (NSF)

USGS – Earth Mapping Resources Initiative

Earth MRI collects multiple types of data...

Topography



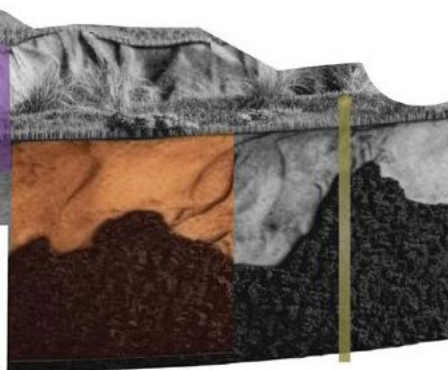
Geology



Geochemistry



Geophysics



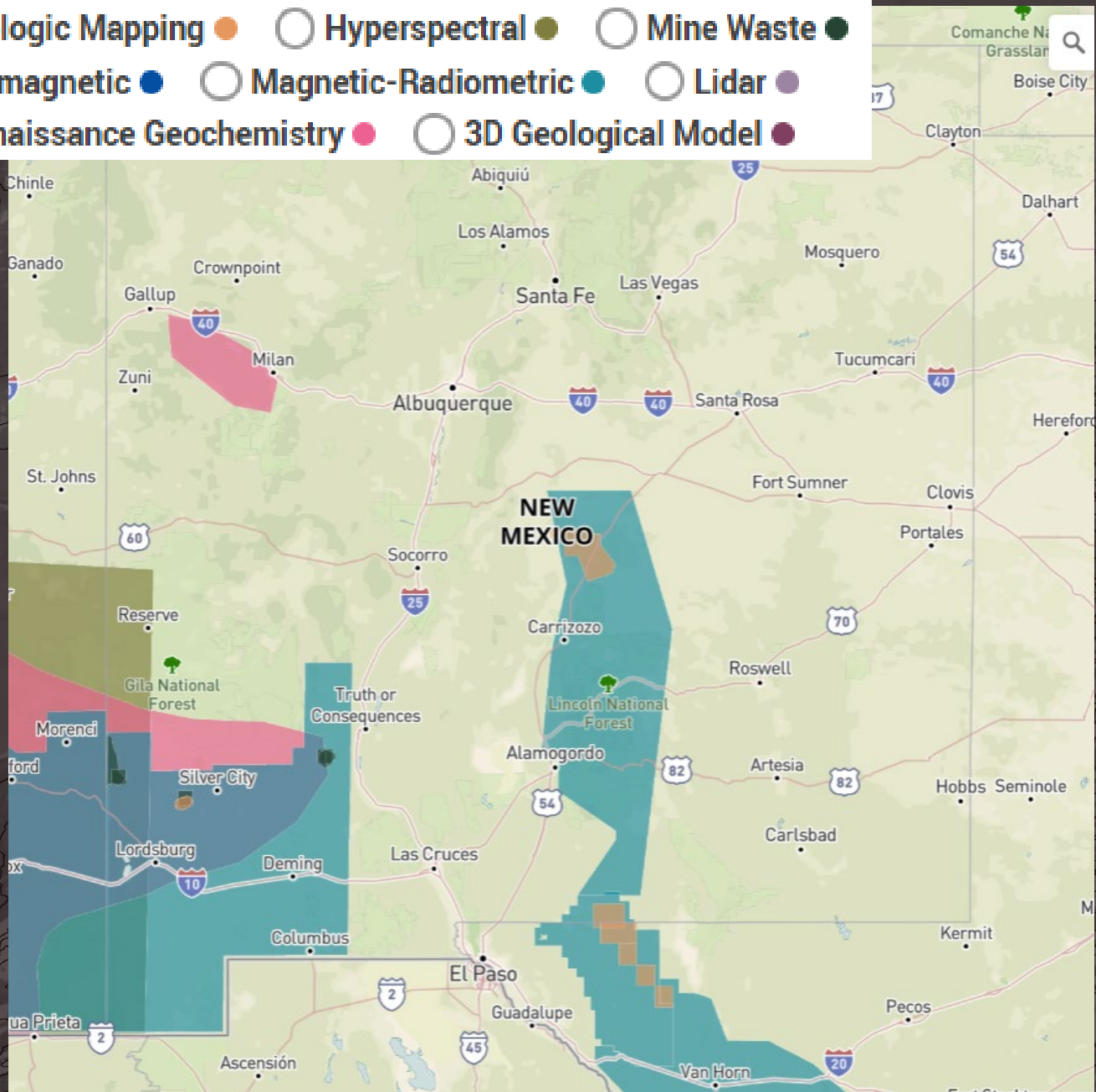
Borehole Information



... and more

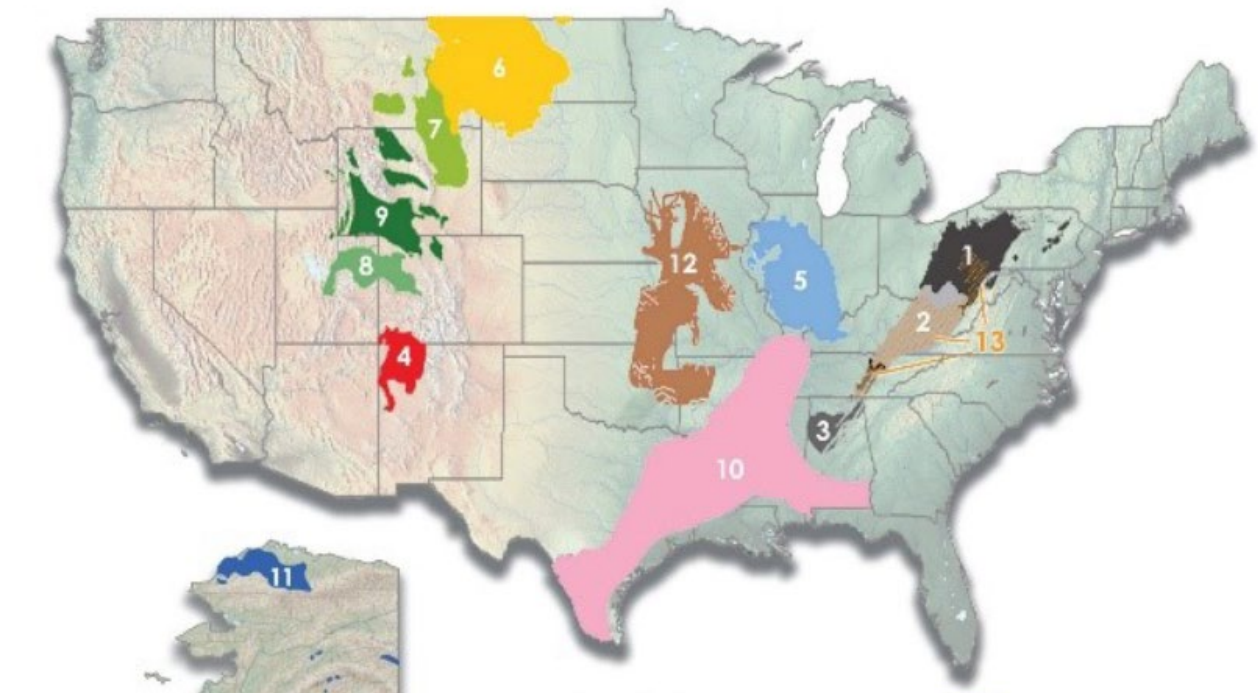
... for a fuller picture of the Earth and its resources.

- All
- Geologic Mapping
- Hyperspectral
- Mine Waste
- Electromagnetic
- Magnetic-Radiometric
- Lidar
- Reconnaissance Geochemistry
- 3D Geological Model



DOE- Carbon Ore, Rare Earth, and Critical Minerals (CORE-CM)

CORE-CM INITIATIVE



- US BASINS**
- 1 Appalachian Basin, North
 - 2 Appalachian Basin, Central
 - 3 Appalachian Basin, South
 - 4 San Juan River-Raton Basin
 - 5 Illinois Basin
 - 6 Williston Basin
 - 7 Powder River Basin
 - 8 Uinta Basin
 - 9 Green River-Wind River Basin
 - 10 Gulf Coast Basin
 - 11 Alaska Basin
 - 12 Cherokee-Forest City Basin
 - 13 Mid-Appalachian Basin

 AOI 4: San Juan River-Raton Basin (CO, NM) — New Mexico Institute of Mining and Technology

The background of the slide is a dark gray topographic map showing contour lines and a river. The NSF logo is centered at the top in a light blue color.

NSF

Dear Colleague Letter

Novel Approaches to Critical Minerals Research in the Geosciences (GEO-CM)

February 22, 2023

Invites proposals on fundamental research to facilitate discovery, characterization, extraction and separation of critical minerals such as essential metals and rare earth elements required to achieve a clean-energy future.

Engineering (ENG) | Geosciences (GEO) | Mathematical and Physical Sciences (MPS) | Social, Behavioral and Economic Sciences (SBE) | Technology, Innovation and Partnerships (TIP) | the Office for International Science and Engineering (OISE) | and the Office of Integrative Activities (OIA) including the NSF's Established Program to Stimulate Competitive Research (EPSCoR) Office.

Workforce Development- undergraduates

The Bureau of Geology employs around 50 undergraduates during the school year. These students are involved in every aspect of running our state survey, including minerals-focused work. Funding comes from state, federal, and philanthropic sources.

- In summer 2022, we hosted an NSF-funded “Minerals and Fluids” summer camp
- We have also hosted 14 NSF-funded Earthscope interns, a number of whom have worked on minerals research



Graduate students and post-docs

Trained in New Mexico, connected to New Mexico industry, state government, and national laboratories through internships and/or permanent employment.

