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Searching in Michigan for Minerals that America Needs

At the Michigan Geological Survey (MGS) and the Michigan Geological Repository for Research and Education (MGRRE), we are leaving no stone unturned in our search for minerals you may never have heard of, like sylvite, cesium, and manganese. Why?

Because America depends on resources like these, defined by the Department of the Interior as the 35 “critical minerals and rare earth elements.” But we are not producing enough of them. In fact, we are not producing any of some of the “rare earth elements.” We import 90% or more of these minerals and elements—mostly from China.

And America’s dependence on foreign sources has increased dramatically. In the 1990’s, America was the world’s top minerals producer and exporter. Now we are the world’s top importer, making us increasingly vulnerable to supply shortages and price volatility.

Our newest research grant, from the U S Geological Survey, focuses on finding these minerals in Michigan. **Dr. William Harrison**, MGRRE Director, is leading a research team comprised of **John A. Yellich**, director of the Michigan Geological Survey; **Dr. Peter J. Voice**, research scientist and geologist; **Dr. Joyashish Thakurta**, economic geologist; **Jennifer L. Trout**, data manager; and several graduate and undergraduate students.

Examples of Michigan’s Critical Minerals: potash sylvite *(left, lighter colors)* ***graphite*** *(center, dark) and* ***manganese*** *(two specimens on right)*

We are joining in a nationwide search for potential sources of these materials that we rely on every day—for energy and crop production, transportation, telecommunications, electronics, infrastructure and even national security.

We are tracking down geologic data about these minerals in Michigan in published and unpublished reports (by universities, industry and government), reviewing and preparing

geologic maps, and compiling resource lists. We are finding hidden gems of information in old, sometimes forgotten or disregarded reports.

We plan to use what we learn in this initial investigation to apply for additional funding in the next phase of this USGS program. Finding these materials in Michigan could mean creating more jobs and providing raw materials that so much of America's economy and security depend upon.