

Naturally Occurring Hazardous Materials: Natural Doesn't Always Equal Healthy

To many, the phrase “hazardous materials” conjures up images of workers in coveralls and respirators cleaning up a chemical spill. While these images in popular media are accurate, not every hazardous material is something produced by humans.

This year the Oregon Department of Transportation (ODOT) Research Unit has begun a project to identify the types and locations of hazardous materials that occur naturally throughout the state. Some of these materials, such as Mercury and Arsenic, have long been recognized as hazardous and are mostly familiar to the general public. Even if their natural occurrence is not common knowledge, they are widely recognized as hazardous. Other materials that occur in Oregon only came to be recognized as hazardous in the late 20th century.

One such mineral is Erionite, which was first recorded in Oregon. Erionite was first described as a mineral by A.S. Eakle in 1898 from a deposit near Durkee, Oregon. The deposit he described is a rare fibrous occurrence of the mineral. It was not until 1959 that additional Erionite deposits were identified in published literature. These subsequent deposits are microscopic occurrences. From the 1960's on, Erionite has been found to be rather widespread in its occurrence, with the most extensive deposits being in the Western United States.

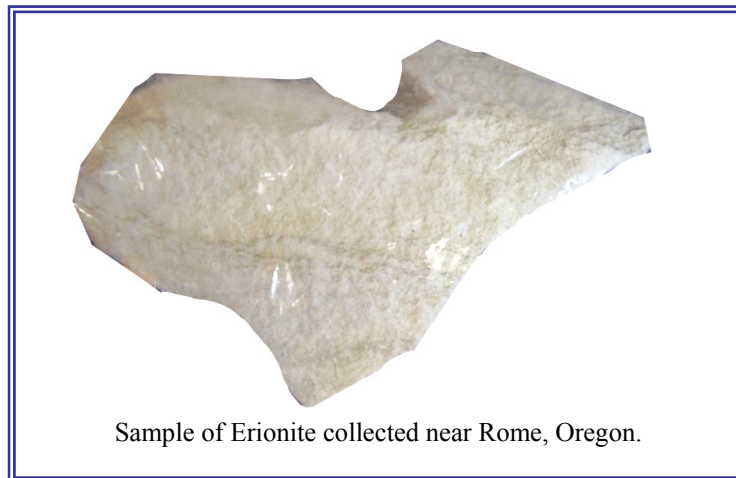
Beginning in the 1970's, epidemiological investigations in Turkey revealed a link between Erionite and pleural mesothelioma, a disease most commonly associated with certain asbestos minerals. As the location where this mineral was first described, Oregon is understandably concerned about identifying where it occurs in the state.

While work is just beginning on the ODOT Naturally Occurring Hazardous Materials project, the investigators (the Oregon Department of Geology and Mineral Industries) have compiled a preliminary list of 42 materials to be considered. This list is now in review.

Once the list is finalized, Geographic Information System (GIS) technology will be used to map where these materials are likely to be encountered. These locations will be tied to a database of the characteristics, hazards, analytical methods, and precautions that are associated with each material.

The ultimate objective of this work is to assure that ODOT maintenance and construction activities take the presence of these hazardous materials into account. In this way, ODOT can protect the health of those who work on ODOT projects and

the general public from the disturbance of these materials. Upon completion of the project, the GIS data will be made available.



Sample of Erionite collected near Rome, Oregon.



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**Information about Erionite was drawn from “Occurrences of Erionite in Sedimentary Rocks of the
Western United States,” Open-File Report 96-018, U.S. Geological Survey, Denver Colorado, 1996, 24 p.**