Background and perspectives on the Pajarito Mountain yttrium–zirconium deposit, Mescalero Apache Indian Reservation, Otero County, New Mexico

by Virginia T. McLemore, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM 87801

An important yttrium–zirconium deposit has been discovered at 8,014-ft-high Pajarito Mountain in the northeastern part of the Mescalero Indian Reservation, south of Ruidoso in south-central New Mexico. The accompanying article by Sherer (1990) briefly describes the geology and economic potential of this deposit, which will be developed by Molycorp, Inc. The purpose of this paper is to present some background information on previous work on the area and to provide insight into the significance of this deposit.

The presence of Protorezoic crystalline rocks at Pajarito Mountain was first confirmed by K/Ar dating reported by Kelley (1968) although previous workers (Thompson, 1942, p. 12; Lloyd, 1949, pl. 1) suggested that these rocks were Precambrian age. Motts and Gaul (1960), after detailed mapping and petrographic studies, presented compelling arguments for a Tertiary age of the complex, but subsequent dating reported by Kelley (1968) and the U.S. Geological Survey (Moore, Foord, and Meyer, 1988) confirm a Protorezoic age of about 1,100–1,200 Ma. These Protorezoic rocks consist of gabbro, syenite, quartz syenite, and alkali granite (Kelley, 1968; Condie and Budding, 1979; Moore, Foord, and Meyer, 1988; Sherer, 1990). The economic potential of the area was unevaluated until recently although a few reports suggested the area had potential for uranium and/or thorium (McLemore, 1982, 1983) and rare-earth elements (McLemore et al., 1988a, b) based entirely on the reported lithologies. The U.S. Geological Survey spent 1980–1982 mapping the northeastern part of the Mescalero Reservation (Moore, Foord, and Meyer, 1988; Moore, Foord, Meyer, and Smith, 1988), however, their work was not published until 1986 or later (Moore and Foord, 1986; Moore, Foord, and Meyer, 1988).


Access to the Pajarito Mountain deposit is heavily restricted and currently permission must be obtained from both the Mescalero Indian Tribe and Molycorp, Inc. before entering the area.

References


New Mexico GEOLOGY

● Science and Service
Volume 12, No. 2, May 1990

Editor: Carol A. Hjelmeling

Drafting assistance: Rebecca Titus

Published quarterly by New Mexico Bureau of Mines and Mineral Resources, a division of New Mexico Institute of Mining & Technology

BOARD OF REGENTS

Ex Ofticio

Garrey Carruthers, Governor of New Mexico

Alan Morgan, Superintendent of Public Instruction


Carol A. Rymer, M.D., Sec./Treas., 1989–1995, Albuquerque


President . . . . . . . . . . . . Laurence H. Lattman

New Mexico Institute of Mining & Technology

Director and State Geologist . . . . . Franklin K. Kottowski

Associate Director . . . . . . . . . James M. Robertson

Subscriptions: Issued quarterly, February, May, August, November; subscription price $6.00/calendar year.

Editorial matter: Articles submitted for publication should be in the editor’s hands a minimum of five (5) months before date of publication (February, May, August, or November) and should be no longer than 20 typewritten, double-spaced pages. All scientific papers will be reviewed by at least two independent appropriate field of study. Address inquiries to Carol A. Hjelmeling, Editor of New Mexico Geoology, New Mexico Bureau of Mines & Mineral Resources, Socorro, NM 87801.

Published as public domain, therefore reproducible without permission. Source credit requested.

Circulation: 1,600

Printer: University of New Mexico Printing Plant

May 1990 New Mexico Geology