



THE CHENOWETH COLLECTION: A HISTORY OF URANIUM EXPLORATION AND PRODUCTION IN THE WESTERN U.S. 1950-1990

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Arizona Geological Survey



Upgrader Plant at Monument No. 2 Site, Apache County, Arizona

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William I. Chenoweth



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Geologist William (Bill) L. Chenoweth's (1928 – 2018) nearly 70-year career in uranium exploration, mining, and mineral production in the southwestern United States resulted in more than 150 reports and/or maps published by the state geological surveys of Arizona, Colorado, New Mexico, and Utah.

Bill Chenoweth first began studying uranium deposits in the southwestern U.S. in the 1950's as a graduate student whose research project was funded by the U.S. Atomic Energy Commission (AEC). Graduating with his M.S./Ph.D. from the University of New Mexico in 1953, Bill was employed by the AEC to work on uranium exploration drilling projects on the Navajo Indian Reservation in northeastern Arizona. For the next eleven years, Bill focused on uranium ore deposits in northeastern Arizona and northwestern New Mexico. In 1964, Chenoweth transferred from Grants, New Mexico, to the AEC's main office in Grand Junction, Colorado, where he dove into research on uranium ore deposits in South Dakota and Wyoming. In 1970, he was appointed Chief of the Geologic Branch in Grand Junction office where he was responsible for directing the research activities of AEC geologists in the entire western United States. During his tenure, he examined all the major U.S. uranium mining districts and regions.

In 1983, rather than relocate to Washington D.C. with the Department of Energy (DOE), Bill retired into consultancy and became a research associate at New Mexico Bureau of Geology and Mineral Resources. He also served as the Chairman of the Nuclear Minerals Committee for the Energy Minerals Division of the American Association of Petroleum Geologists from 1983-1998.

Since retiring from the DOE in 1983, Bill Chenoweth authored or co-authored more than 150 reports on the uranium mining history, geology, and resources in New Mexico, Arizona, Colorado, and Utah. The bulk of the content of these reports stem from Bill's 30+ years researching uranium with the AEC and the DOE. In retirement, Bill consulted with the Department of Justice on the Radiation Exposure Compensation Act. His memory for details and his meticulous record keeping were an invaluable resource to families of miners seeking compensation for radiation-related illnesses. He was still serving as the secretary/treasurer of the Grand Junction Geological Society at the time of his passing. From 1952 until his death, Bill Chenoweth was a member of the New Mexico Geological Society. Atomic Energy Commission and Uranium Deposits of the Western U.S.

The U.S. Atomic Energy Commission was organized in 1946 to manage the development, use, and control of atomic (nuclear) energy for military and civilian applications. The AEC was subsequently abolished by the Energy Reorganization Act of 1974 and succeeded by the Energy Research and Development Administration (now part of the U.S. Department of Energy) and the U.S. Nuclear Regulatory Commission.

In establishing the AEC, 'Congress declared that atomic energy should be employed not only in the Nation's defense, but also to promote world peace, improve the public welfare, and strengthen free competition in private enterprise. After long months of intensive debate among politicians, military planners and atomic scientists, President Harry S. Truman confirmed the

civilian control of atomic energy by signing the Atomic Energy Act on August 1, 1946 (Buck,1983)".

The AEC elected to leave the mining and processing of uranium ores almost entirely to private enterprise. To promote exploration and production, the AEC issued a number of offers for uranium ores culminating in the Domestic Uranium Program Circular 5, Revised, of March, 1951.

Between 1948 and 1956, the US Geological Survey and AEC drilled 5.5 million feet to explore for uranium deposits throughout the western United States. Other federal assistance programs to encourage exploration and facilitate uranium discovery, included: airborne reconnaissance and posting of anomalies; development of geophysical instruments and techniques; improvement of ore sampling practices; and free examination and assay of radioactive minerals for prospectors. As a result, between 1948 and 1961, uranium ore production increased from 54,000 tons to 8,000,000 tons, concentrate production from 110 to 17,600 tons, and minable reserves from less than 1,000,000 to over 74,000,000 tons.

Acknowledgments

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And we thank Bill Chenoweth for packaging AEC uranium research results into geologic products for the next generation of researchers and for those communities impacted by the hunt for uranium.

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