

**LOCATION, GEOLOGY AND MINING,
SAM CHARLIE NO. 1 URANIUM-
VANADIUM PROSPECT, NAVAJO
COUNTY, ARIZONA**

by

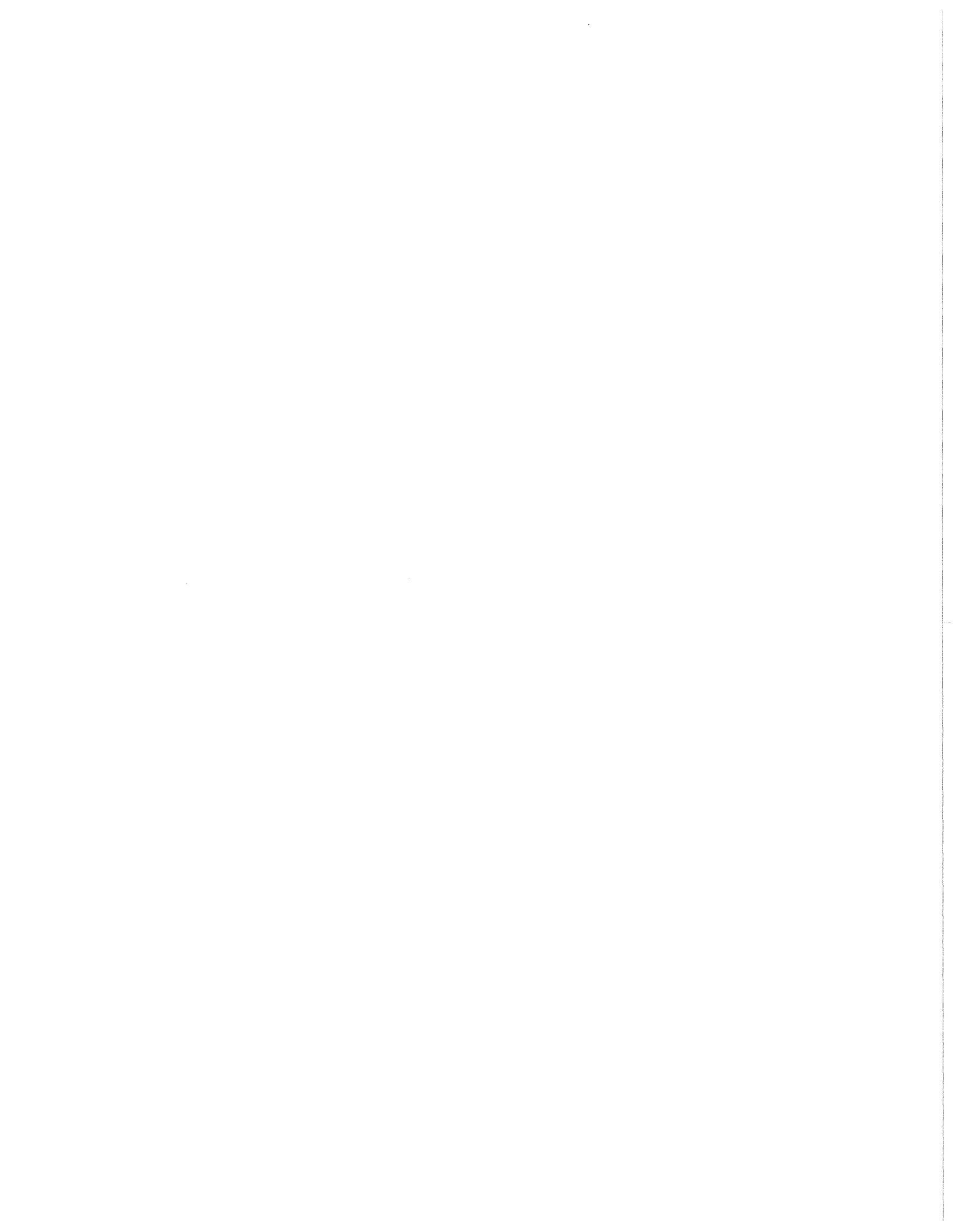
William L. Chenoweth
Consulting Geologist, Grand Junction, Colorado

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416 W. Congress, Suite #100, Tucson, Arizona 85701

*Interpretations and conclusions in this report are those of the consultant
and do not necessarily coincide with those of the staff of the Arizona
Geological Survey*

This report is preliminary and has not been edited
or reviewed for conformity with Arizona Geological Survey standards



INTRODUCTION

In February, 1953, a 5 ton shipment of uranium - vanadium ore was made from the Sam Charlie No. 1 mining permit in the Monument Valley area of Navajo County, Arizona. Over the years the location of this occurrence has been lost and/or misplaced. This occurrence is not shown on the U.S. Atomic Energy Commission (AEC) map of the Monument Valley area (Young and others, 1964). Scarborough (1981, p. 221) reported that this shipment came from Hunts Mesa but did not show its source on plate 7 in that report.

Recently, some information was located in the AEC files stored at the Department of Energy's Grand Junction Projects Office in Grand Junction, Colorado. This brief report summarizes what is known about the Sam Charlie No. 1 uranium - vanadium prospect.

LOCATION AND LAND STATUS

The Sam Charlie No. 1, uranium - vanadium prospect was located on Hunts Mesa approximately 10 miles northeast of Kayenta, Arizona at latitude 36° 53' 50" and longitude 110° 03' 30" (Figure 1). Hunts Mesa (in older reports, spelled Hunt's) forms the south rim of the Inter Valley of Monument Valley Navajo Tribal Park (Figure 2). The mesa can be reached by a series of unimproved dirt roads from the Monument No. 2 uranium - vanadium mine in Cane Valley (Figure 1).

The Monument Valley Tribal Park, established by the Tribal Council on July 11, 1958, is composed of 29,817 acres of spectacular red rock mesas, buttes, monoliths and spires. The uranium exploration and mining on Hunts Mesa occurred before the park was established.

The prospect was within the Navajo Indian Reservation. Mining permits and leases were issued by the Navajo Tribal Council and approved by the Bureau of Indian Affairs (BIA), U.S. Department of Interior. Mining permits could be obtained by individual Navajos only. Permit holders could assign the mining rights to another individual or company; like the permits, these assignments had to be approved by the Tribal Council and the BIA. Leases could be issued directly by the BIA. Permits were issued for a 2-year period and could be renewed for an additional 2 years. Leases were issued for periods up to 10 years. No more than 960 acres of tribal land could be held by any one company or individual. Both the permittee and the tribe received royalties from ore production. Based on the mine value of the ore, the tribe received between 10% and 20% royalties and the permittee between 2% and 5% royalties.

In addition to mining permits, the tribe issued drilling and exploration permits. These permits were good for 120 days and were not renewable.

GEOLOGIC SETTING

The uranium ore deposits in Monument Valley occur in channels of the Shinarump Member of the Upper Triassic Chinle Formation that have been scoured into the underlying Moenkopi Formation of Middle Triassic age. Geologic investigations by the AEC (Chester, 1953) and the U.S. Geological Survey (Witkind and Thaden, 1963) mapped two segments of a channel on Hunts Mesa (Figure 3). The western channel containing the Sam Charlie No. 1 prospect, is 50 wide and is scoured 20 feet into the Moenkopi. It is filled with dark gray, conglomeratic sandstone containing silicified wood and carbonaceous fragments of fossil wood. The conglomerate at the base of the channel grades upward into coarse-to medium-grained sandstone.

Tyuyamunite, malachite and azurite have been identified in samples from the outcrops. Calcite and jarosite were also present in the outcrops. The uranium and copper minerals coated quartz grains in the sandstone and replaced clay pebbles (Witkind and Thaden, 1963).

EXPLORATION AND MINING ACTIVITIES

Exposures of uranium - bearing material on Hunts Mesa were brought to the attention of the AEC on June 2, 1951. At that time, the area of the western exposures, channel 58, Figure 3, was claimed by Sam Charlie of Chilchinbito, Arizona (Chester, 1953). He had located the mineralization in August 1948 and was holding 40 acres with an unnumbered Navajo Tribal Mining Permit. Associated with Charlie were Ray Hunt, Chilchinbito Trading Post; Jim Hunt, San Juan Trading Post, Mexican Hat Utah; and Harris Shumway, Blanding Utah (Chester, 1953). These partners were attempting to obtain a lease on the area of the mining permit. They had built a rough road up on the mesa and had done some blasting on the mineralized rock outcrop (Chester, 1953).

The eastern exposures, channel 52, Figure 3, were held by Koley Black of Shiprock, New Mexico (Chester, 1953). Black had located his claim, April 26, 1949 and his unnumbered mining permit covered 21 acres (Chester, 1953).

As the result of his investigations on Hunts Mesa, Chester (1953) recommended to the AEC that 25,000 feet of drilling be done to determine the uranium possibilities of the two areas. Chester's recommendation was modified and between October 20 and November 14, 1952, thirty two holes with a total footage of 2,129 feet were drilled on Hunts Mesa (Kelley, 1953). Cores were taken of the entire Shinarump and the upper few feet of the Moenkopi. All of the drilling was done near the eastern exposures across the neck of Hunts Mesa. Twenty seven holes were drilled on a grid pattern and five holes were offsets to mineralized holes. Only three holes penetrated uranium mineralization and these contained grades of 0.03, 0.05, 0.08 percent U_3O_8 (Kelley, 1953).

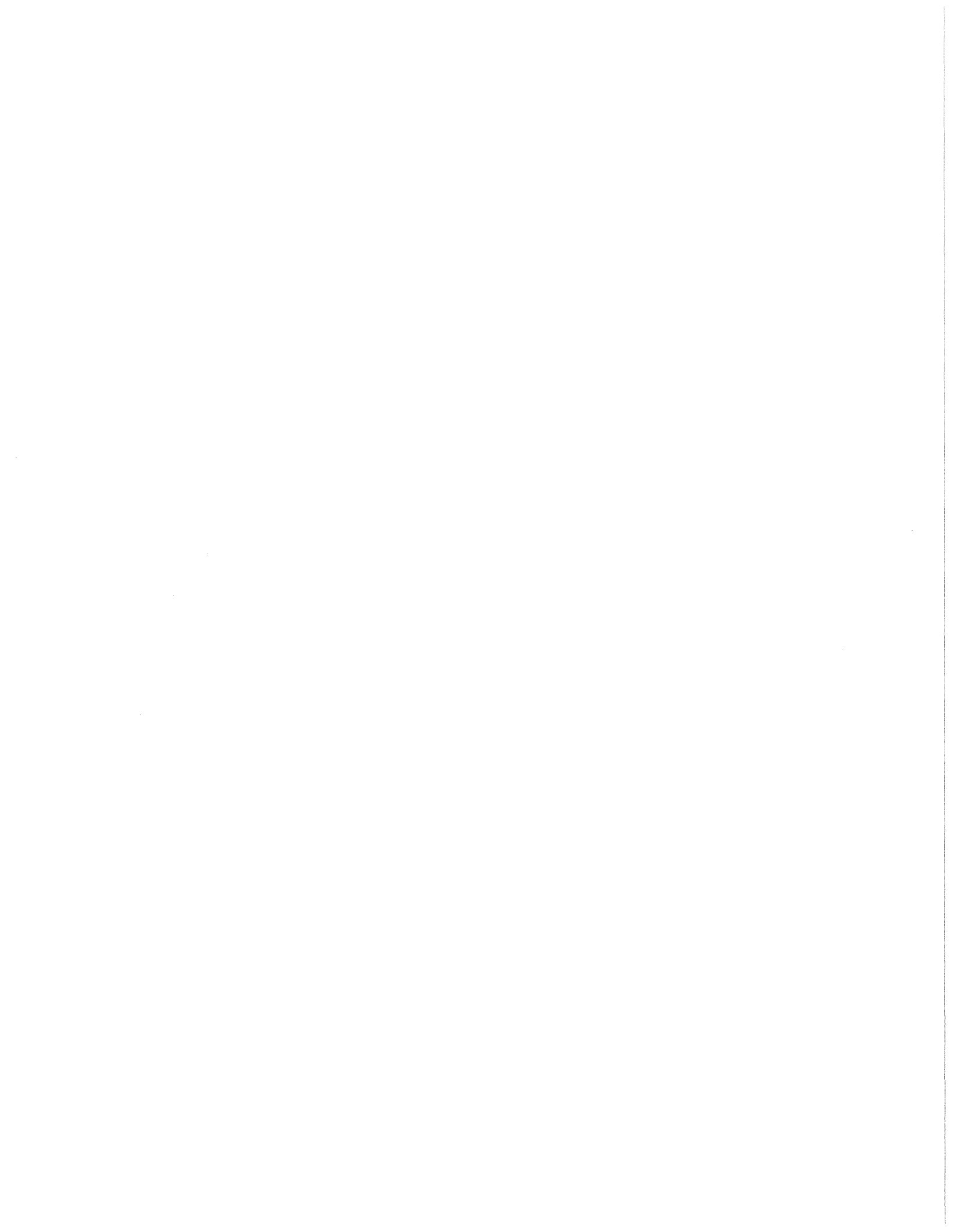
In April 1952, due to the increased uranium prospecting on the Navajo Reservation, the Tribal Council began issuing numbered mining permits (MP's). On April 26, 1952, MP-11 was issued to Sam Charlie for his 40 acres on Hunts Mesa. The mining rights to the permit were assigned to A.F. Allen and James E. Hunt on June 23, 1952.

On February 5, 1953, a 5.07 ton shipment by Allen and Hunt was received at the AEC's ore-buying station at Shiprock, New Mexico. This shipment (Lot L-3478), identified as the Sam Charlie No. 1 property, contained 24.34 pounds U_3O_8 and 131.86 pounds V_2O_5 and averaged 0.24 percent U_3O_8 and 1.30 percent V_2O_5 . Bureau of Indian Affairs royalty records list the value of the shipment at \$129.13 (\$88.25 uranium, \$40.88 for vanadium), for which the Navajo Tribe received a 12 percent royalty or \$15.50. The source of the ore was probably at the location of AEC sample 13755 (Figure 3).

Acknowledgement. A review of this manuscript by Stephen M. Richard of the Arizona Geological Survey is acknowledged.

REFERENCES

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- Witkind, I.J., and Thaden, R.E., 1963, Geology and uranium-vanadium deposits of the Monument Valley area, Apache, and Navajo Counties, Arizona, with sections on Serpentine at Garnet Ridge, by H.E. Malde and R.E. Thaden, and Mineralogy and paragenesis of the ore deposit at the Monument No. 2 and Cato Sells mines, by D.H. Johnson: U.S. Geological Survey Bulletin 1103, 171 p., 7 sheets.
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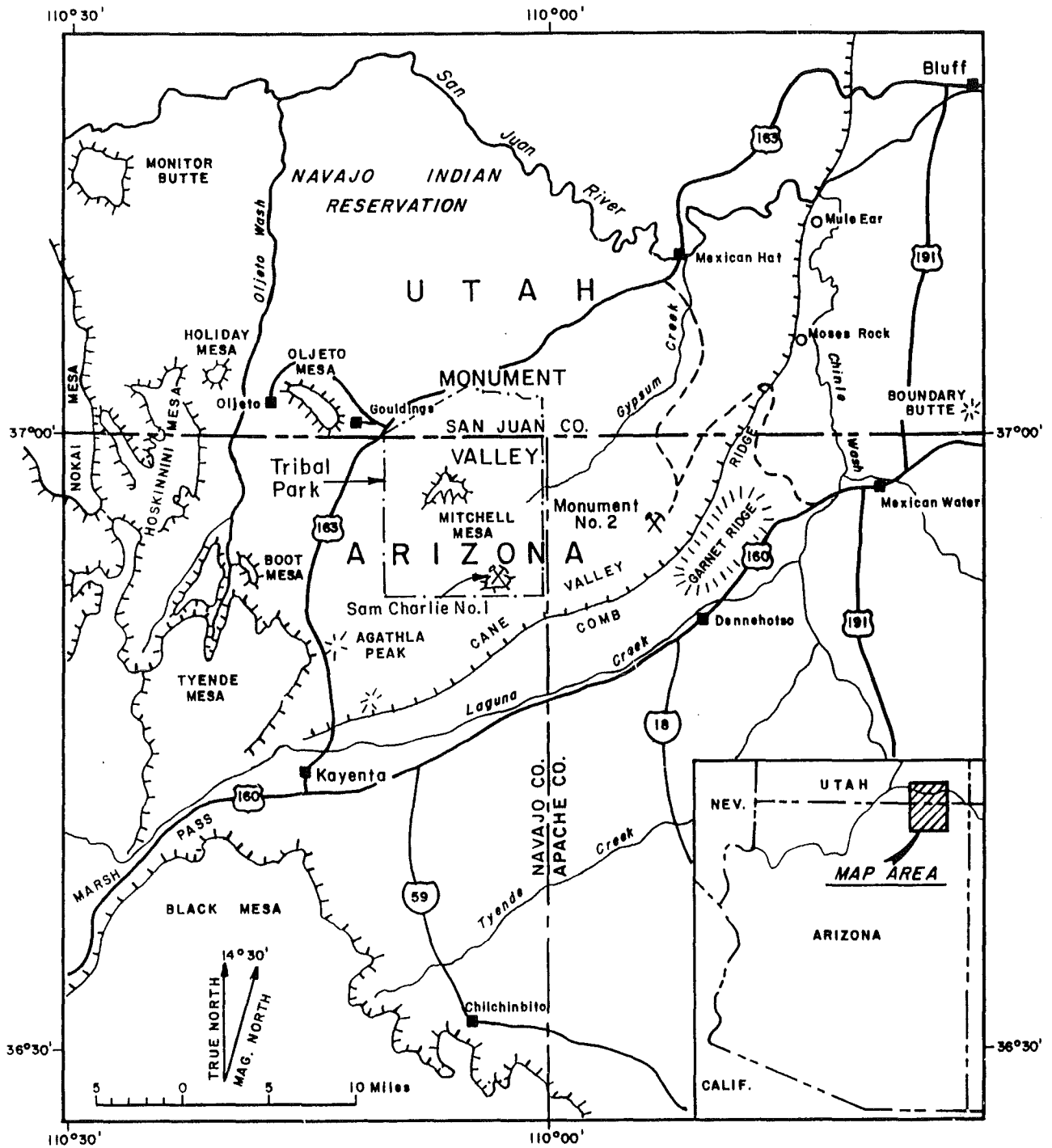
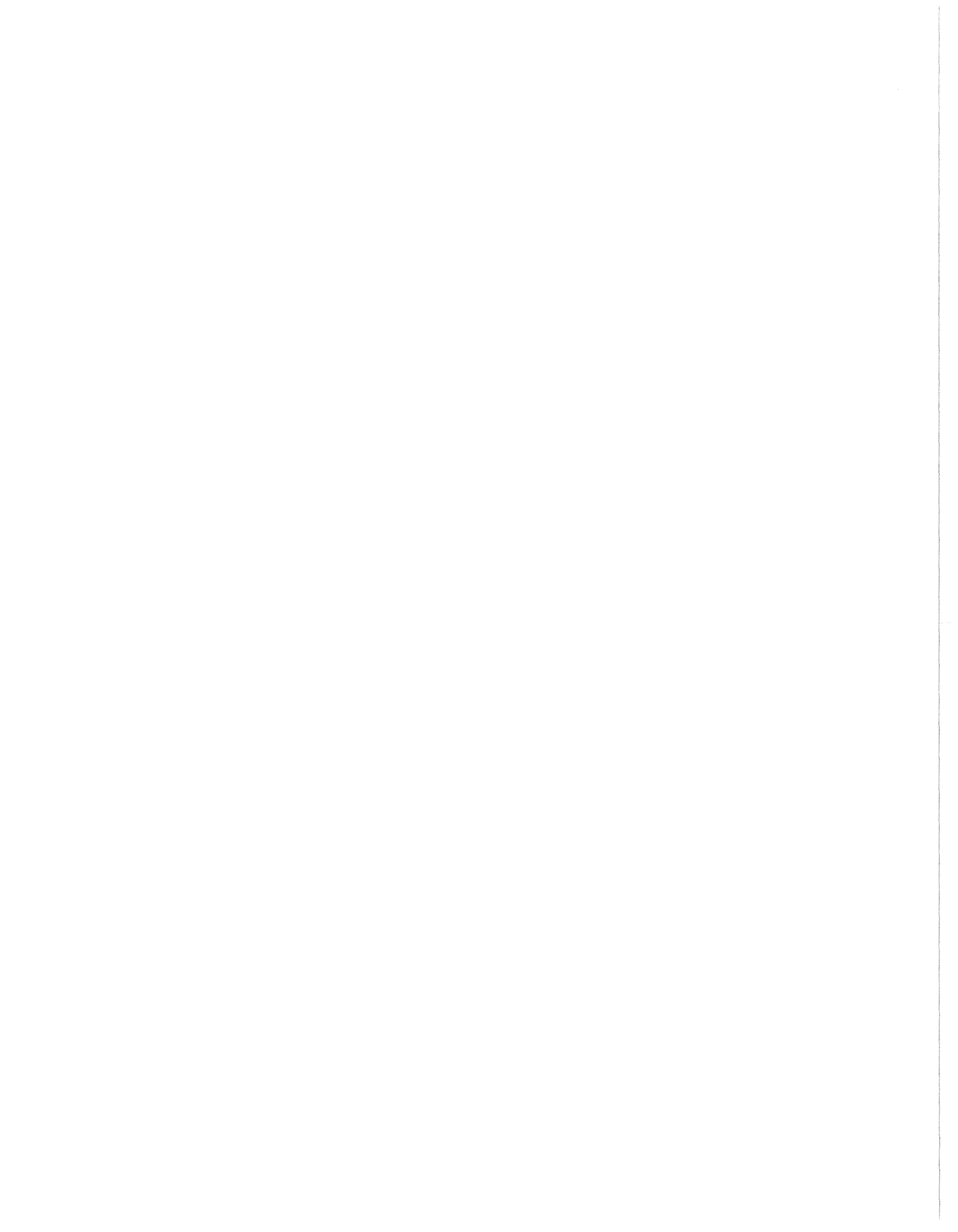


Figure 1. Index map of Monument Valley, Arizona - Utah showing the location of the Sam Charlie No. 1 uranium prospect.



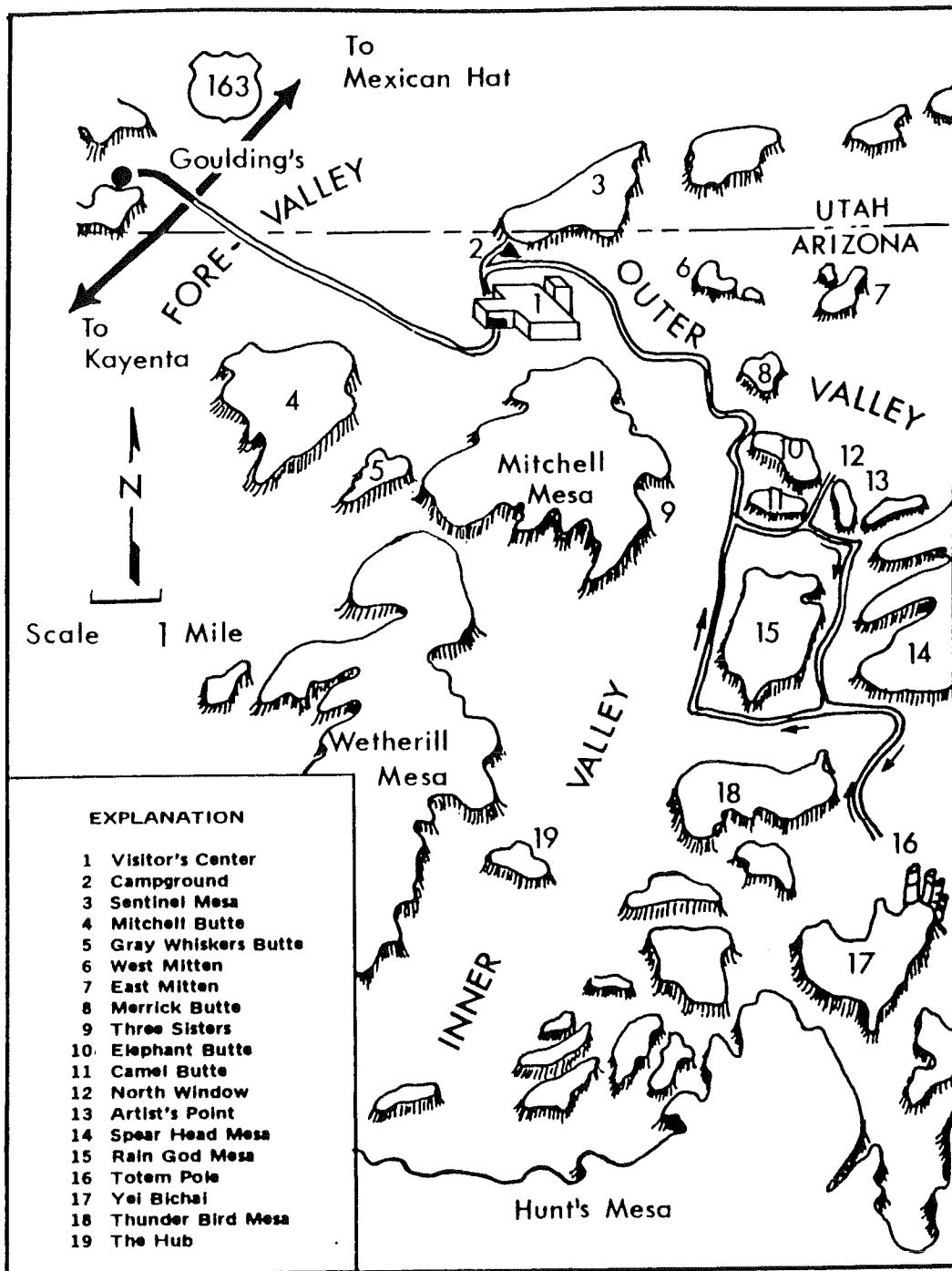
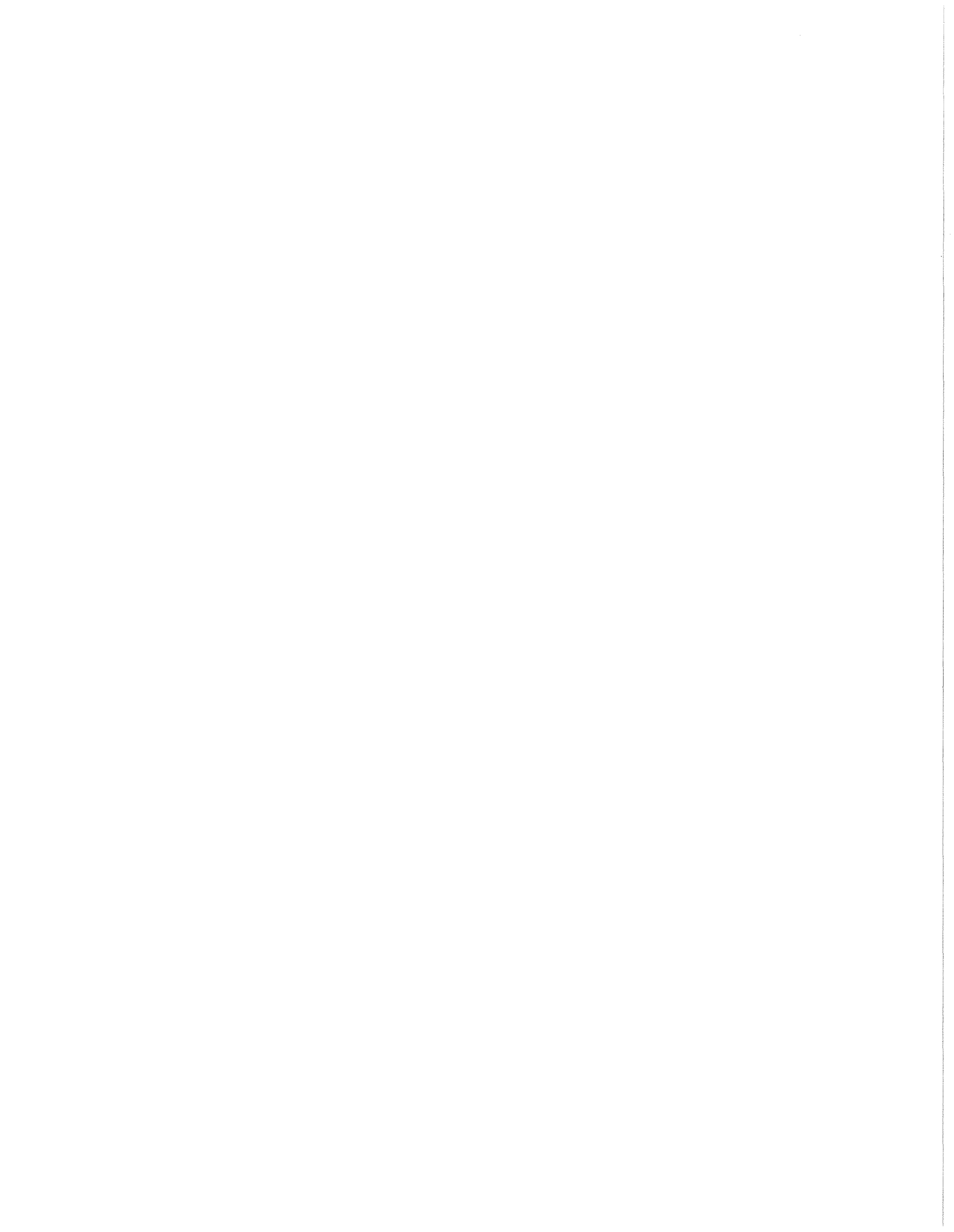


Figure 2. Generalized map of the features of Monument Valley Navajo Tribal Park (Baars and others, 1973).



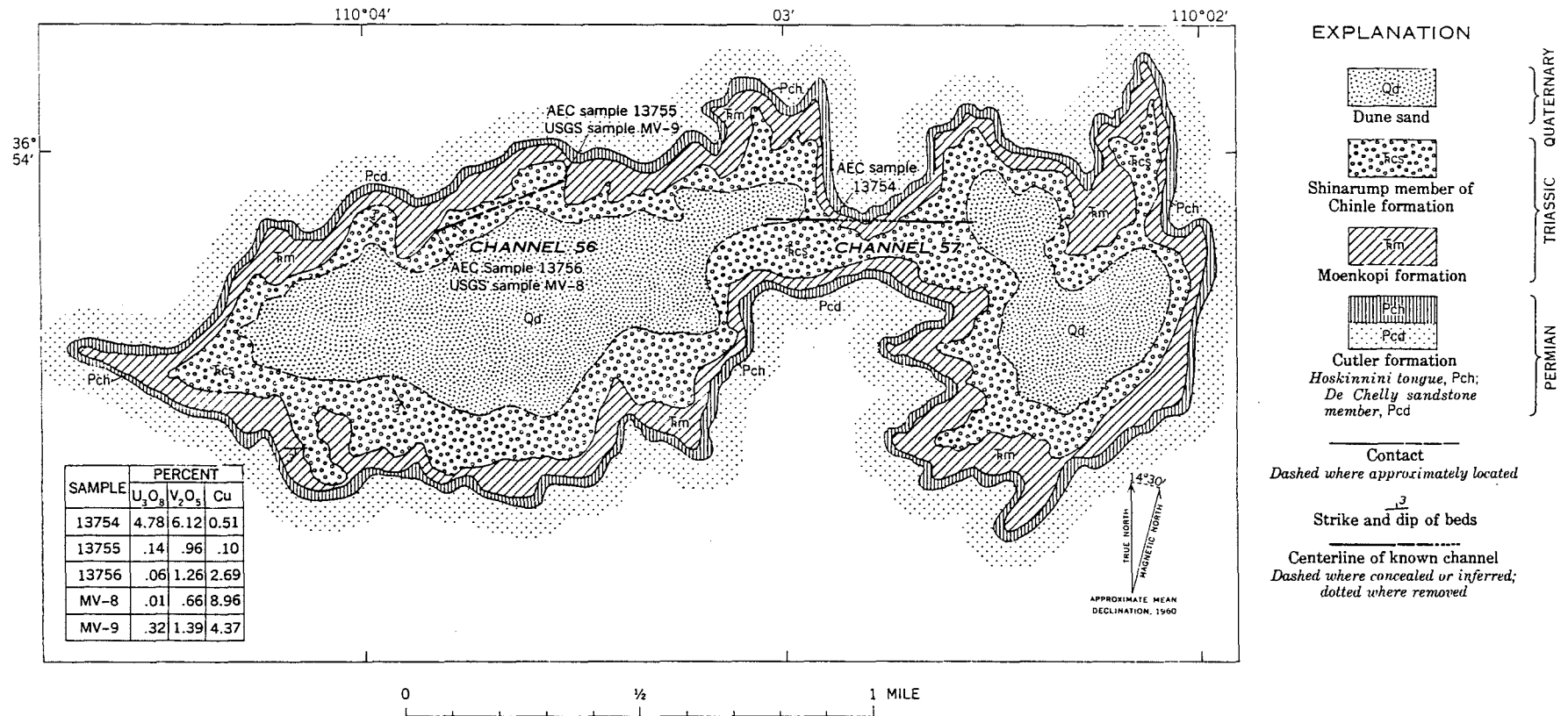


Figure 3: Geologic map of Hunts Mesa showing the location of mineralized exposures. From Witkind and Thaden (1963). The Sam Charlie shipment came from the area of sample 13755.

