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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

CENOZOIC GEOLOGY AND SECTIONS OF THE IONE QUADRANGLE, NYE COUNTY, NEVADA

By
Charles J. Vitaliano

MINERAL INVESTIGATIONS
FIELD STUDIES MAP MF-255

PUBLISHED BY THE U. S. GEOLOGICAL SURVEY
WASHINGTON, D.C.
1963

MAP MF-255

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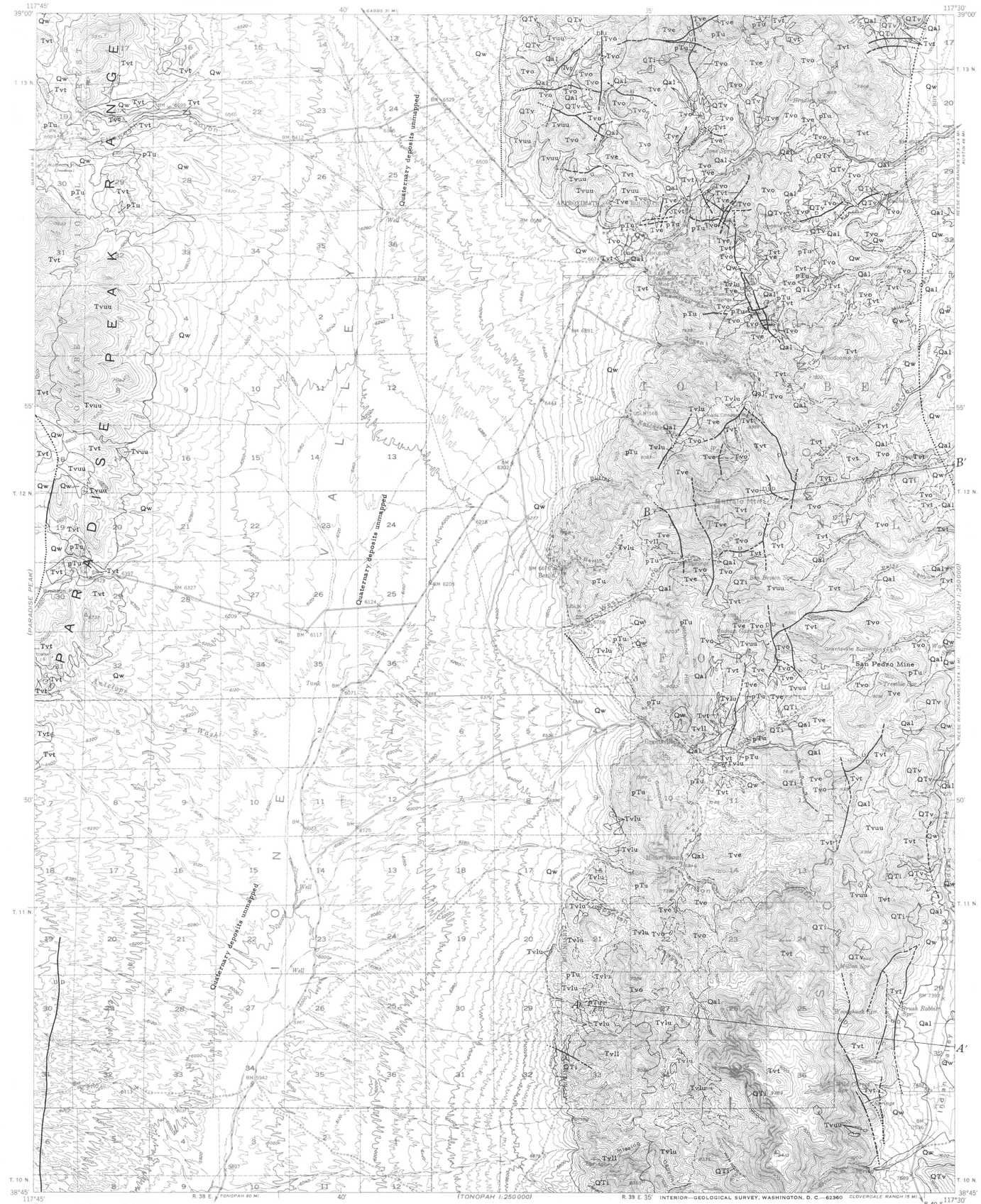


Base map by Topographic Division
U.S. Geological Survey, 1948

Cenozoic geology by Vitaliano,
1945, 1946, and 1954

EXPLANATION

Qal — Alluvium
Sand and gravel; restricted to valley floors; covers large areas in Ione and Indian Valleys

Qw — Hill wash and terrace gravels
Fine to coarse gravel, mainly older than alluvium. Forms prominent terraces in Reese River Valley, and subdued terraces in Ione Valley

QUATERNARY

QTv — Volcanic rocks
Andesite and trachyandesite lavas and volcanic plugs. Lavas are olivine bearing, and associated with white-, gray-, and lavender-colored pyroclastic rocks of intermediate composition. Limited to the Shoshone Mountains

TERTIARY OR QUATERNARY

EROSIONAL UNCONFORMITY (?)

QTi — Intrusive rocks
Intrusive dikes and plugs: andesites, rhyolites, and trachyandesites ranging in age from Tertiary to Quaternary

TERTIARY AND QUATERNARY

TERTIARY

Pliocene (?) — Upper volcanic sequence

Tvuu — Upper division
Thin-bedded, dark-red to black, vesicular, aphanitic to meagerly porphyritic andesite and trachyandesite. Andesites are labradorite, hypersthene, and augite-hypersthene varieties. Trachyandesites contain olivine. Thickness approximately 300 feet

EROSIONAL UNCONFORMITY (?)

Tvt — Toyabe Quartz Latite
Light-colored pyroclastic rocks, mainly ignimbrites, breccias, and associated lavas and intrusive (?) rocks. In the Shoshone Mountains, south of Ione Canyon, dacite, dacite-breccia, and rhyodacitic ignimbrites in lower and middle members, overlain by rhyolitic vitrophyre and flows in upper member; north of Ione Canyon, rhyolite ignimbrites and sillar-type deposits with occasional rhyolite flows. In the Paradise Range, rhyolitic ignimbrites. Thickness approximately 2,000 feet

EROSIONAL UNCONFORMITY (?)

Tvo — Oddie Rhyolite
Flows, tuffs, and coarse-grained volcanic breccias, white to reddish-white to tan. Rhyolite breccia at base, overlain by rhyolite flows, lithic tuffs, and associated aphanitic facies, followed by younger rhyolite which is distinctly intrusive in many localities. Thickness approximately 1,000 feet

EROSIONAL UNCONFORMITY

Upper Miocene and lower Pliocene — Middle volcanic sequence

Tve — Esmeralda Formation
Upper division, fine-grained white to buff sandstone containing some poorly preserved fossils; very poorly represented in quadrangle. Thickness approximately 4,000 feet. Lower division coarsely fragmental, white to red breccia with associated lithic and ashy tuffs, moderately well cemented and cut by calcite veinlets; lithic fragments are composed of all earlier rocks in the area

EROSIONAL UNCONFORMITY

Lower volcanic sequence

Tvlu — Upper division
Dark-red to black, distinctly porphyritic lavas with large hornblende, biotite, pyroxene, and plagioclase phenocrysts in various combinations in aphanitic groundmass; interbedded pyroclastics. Keratophyre (albitized trachyte), trachyte, rhyolite, quartz latite, dacite, andesite, and trachyandesite. Interbedded pyroclastics make up a small percentage of this formation. Intense propylitic alteration is widespread in these and older rocks. Related intrusive rocks cut this and older rocks, but not the youngest andesites in this formation. Thickness approximately 1,000 feet

EROSIONAL UNCONFORMITY (?)

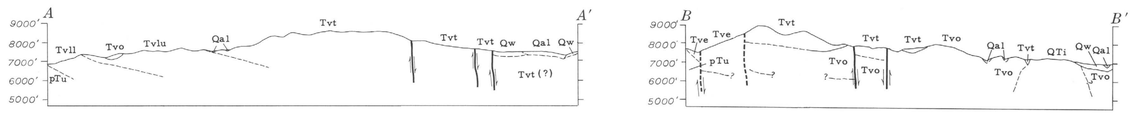
Tvll — Lower division
Generally white to purple lavas with associated pyroclastics. Rhyolite, rhyolite tuff, trachyte, trachyte tuff, and quartz latite; sheared and contorted, with development of low-grade metamorphic textures and minerals. Presence of many quartz veinlets suggests silicification. Interbedded sediments and reworked tuffs occur just beyond the southern boundary of quadrangle. Thickness approximately 1,500 feet

Unconformity

pTu — Pre-Tertiary rocks, undifferentiated
(See Silberling, N. J., 1959, U.S. Geol. Survey Prof. Paper 322, 67 p.)

Contact
Dashed where inferred

U
D
Fault
Dashed where inferred, dotted where covered
U, upthrown side; D, downthrown side



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SCALE 1:62 500

1 ½ 0 1 2 3 MILES

Contour interval 40 feet
Datum is mean sea level

1963

INDEX MAP OF NEVADA

50 0 50 100 150 Miles

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