DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
U.S. ATOMIC ENERGY COMMISSION

DESCRIPTION OF MAP UNITS

Qac ALLUVIUM AND COLLUVIUM (0–1,025 ft)—brown to gray unconsolidated or caliche-cemented loess; lenses and sheets of sand; sandy gravel composed of pebble- to boulder-size fragments of subrounded to subangular silicified tuff, rhyolite, and basalt of Tertiary age and quartzites and carbonates of Paleozoic age.

Tbk BASALT FLOWS OF KIWI MESA (120 ft)—black dense, vesicular, scoriacious, stony basalt with quartz phenocrysts.

Tsr RHYOLITE FLOWS OF SHOSHONE MOUNTAIN (260 ft)—pink to purplish-red flow-banded vesicular rhyolite. Limited to northeastern corner of quadrangle.

Tbs BASALT FLOWS OF SKULL MOUNTAIN (125–140 ft)—dark-gray dense to scoriacious amygdaloidal basalt.

Tbd BASALT DIKE—green fine-grained basalt dike containing argillite xenoliths from Eleana Formation; intrudes Eleana Formation and rhyolite intrusion of Calico Hills (Tc i).

PIAPI CANYON FORMATION:

Tpc TIVA CANYON MEMBER (360 ft)—multiple-flow, simple cooling unit. In descending order, 160 feet of altered pink, silicified, dense, welded tuff with devitrified flattened pumice near top; plagioclase and potash feldspar are common. Next is 55 feet of altered pink silicified dense crystal-poor welded tuff that is underlain by 140 feet of gray and white bedded zeolitic nonwelded tuff with grit-size rhyolite fragments. Welded tuff weathers out in plates on steep slopes.

Tpt TOPOPAH SPRING MEMBER (300–800 ft)—thickens to northeast. Multiple-flow simple cooling unit of lavender ash-flow dense devitrified welded tuff. A vapor phase zone is preserved locally at the top above a black vitrophyre that grades downward to welded lithophysal tuff. Next is a red or black glassy tuff that grades downward to a yellowish-brown nonwelded ash-fall and ash-flow tuff with pebble- to boulder-size fragments of rhyolite at base. Pervasive alteration ranges from red weakly silicified hematitic tuff to white silicified, alunitized, and kaolinized tuff. Weathers to chips, plates, and angular blocks.

ANDESITE FLOWS AND TUFFS OF WAHMONIE FLAT—extend from outcrop three miles southeast of quadrangle into the subsurface where they probably interfinger with the rhyolite flows of the Calico Hills (Tcf). Composed of interbedded andesite and rhyodacite flows and flow breccias, ashy debris beds with cobble- to boulder-size fragments of andesite, and tuffaceous biotite-rich sandstone with pebbles of andesite. Shown on section only.

RHYOLITE FLOWS AND TUFFACEOUS BEDS OF CALICO HILLS (1,000 ft)—correlative in part with Indian Trail Formation.

Tcf RHYOLITE FLOWS—red flow-banded, vesicular, lithophysal, or stony fluid rhyolite flows with bluish-gray glassy zones at top or base.

Tcb TUFFACEOUS BEDS—yellow nonwelded ash flows, white debris beds composed of cobbles and boulders of angular rhyolite and pumice in an ashy matrix, and greenish-gray tuffaceous lenticular, locally biotite-rich, sandstone. Basal tuffaceous beds are conglomeratic with subrounded cobbles of quartzite, carbonate, and rhyolite.

Tci RHYOLITE INTRUSION—gray, silicified and kaolinized, porphyritic.

ELEANA FORMATION:

IPMej Unit J—yellowish-brown and gray thin-bedded argillite, and thin- and thick-bedded quartzite and conglomerate. Only upper part exposed; forms sole of thrust fault.

MDld LIMESTONE AND DOLOMITE (100 ft)—upper 30 feet dark-gray thin-bedded aphanitic crinoidal limestone; lower 70 feet gray laminated to thin-bedded limestone and dolomite. Occurs in faulted blocks thrust over Eleana Formation. Probably equivalent to Mercury and Narrow Canyon Limestones.

Ddn DEVILS GATE(?) LIMESTONE AND NEVADA FORMATION—gray to dark-gray fine- to coarse-grained, thin-and thick-bedded brecciated dolomite and limestone. Occurs in faulted blocks thrust over Mississippian and Devonian limestone and dolomite (MDld) and the Eleana Formation.

GEOLOGIC QUADRANGLE MAP
GQ-368

EXPLANATION

- Qac — Alluvium and colluvium — QUATERNARY
- UNCONFORMITY
- Tbk — Basalt flows of Kiwi Mesa — TERTIARY
- UNCONFORMITY
- Tsr — Rhyolite flows of Shoshone Mountain — TERTIARY
- UNCONFORMITY
- Tbs / Tbd — Basalt flows of Skull Mountain; Tbd, *basalt dike* — TERTIARY
- UNCONFORMITY
- Tpc — Tiva Canyon Member — TERTIARY
- Tpt — Topopah Spring Member; *Stippled where silicified, alunitized, and kaolinized* — TERTIARY
- UNCONFORMITY
- Tcf / Tcb / Tci — Rhyolite flows and tuffaceous beds of Calico Hills; Tcf, *rhyolite flows.* Tcb, *tuffaceous beds.* Tci, *rhyolite intrusion.* *Stipple indicates silicification, alunitization, and kaolinization* — TERTIARY
- UNCONFORMITY
- IPMej — Unit J of Eleana Formation — Pliocene, Piapi Canyon Formation — TERTIARY
- MDld — Limestone and dolomite — DEVONIAN, MISSISSIPPIAN — PENNSYLVANIAN, CARBONIFEROUS
- Ddn — Devils Gate(?) Limestone and Nevada Formation — DEVONIAN

Contact — *Dashed where approximately located*

Fault, showing dip, and bearing and plunge of slickensides — *Dashed where approximately located; short dashed where inferred; dotted where concealed. U, upthrown side; D, downthrown side. Arrow indicates relative horizontal movement*

Thrust fault — *Dashed where approximately located; queried where in doubt. Sawteeth on upper plate*

25/ — Strike and dip of beds and of layering in welded tuffs

Strike and dip of overturned beds

Strike of vertical beds

Horizontal beds

70/ — Strike and dip of joints

Strike and dip of vertical joints

J–11
SE 3445
Tbk 2420
Tpt 2295
TD 1329
Drill hole — *Showing surface elevation (SE), elevation of tops of basalt flows of Kiwi Mesa (Tbk) and of Topopah Spring Member of Piapi Canyon Formation (Tpt), and total depth (TD), in feet*

x — Prospect pit

Base by U.S. Geological Survey, 1961
10,000-foot grid based on Nevada coordinate system, central zone

Geology mapped in 1961

SCALE 1:24 000

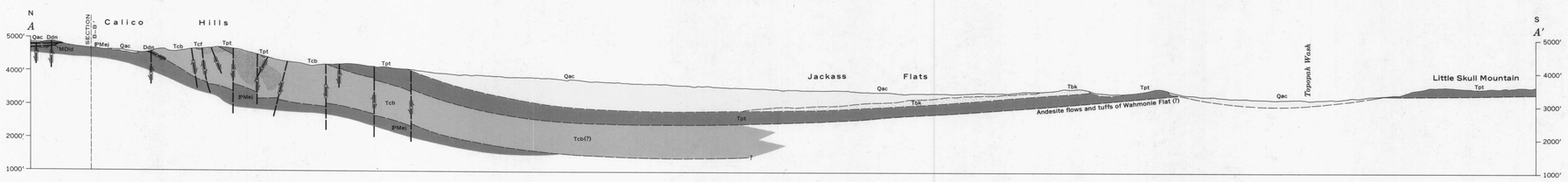
1 ½ 0 1 MILE

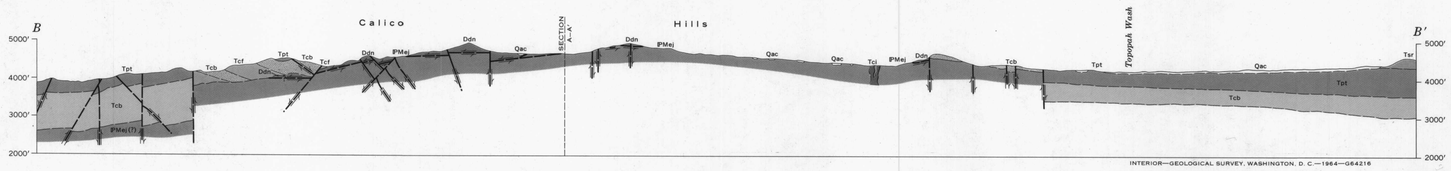
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

APPROXIMATE MEAN DECLINATION, 1964

NEVADA — QUADRANGLE LOCATION





INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1964—G64216

GEOLOGY OF THE JACKASS FLATS QUADRANGLE, NYE COUNTY, NEVADA

By
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1964

D-01

For sale by U.S. Geological Survey, price $1.00