Geologic Map of the Taylor Creek Tin District Black Range, New Mexico

by
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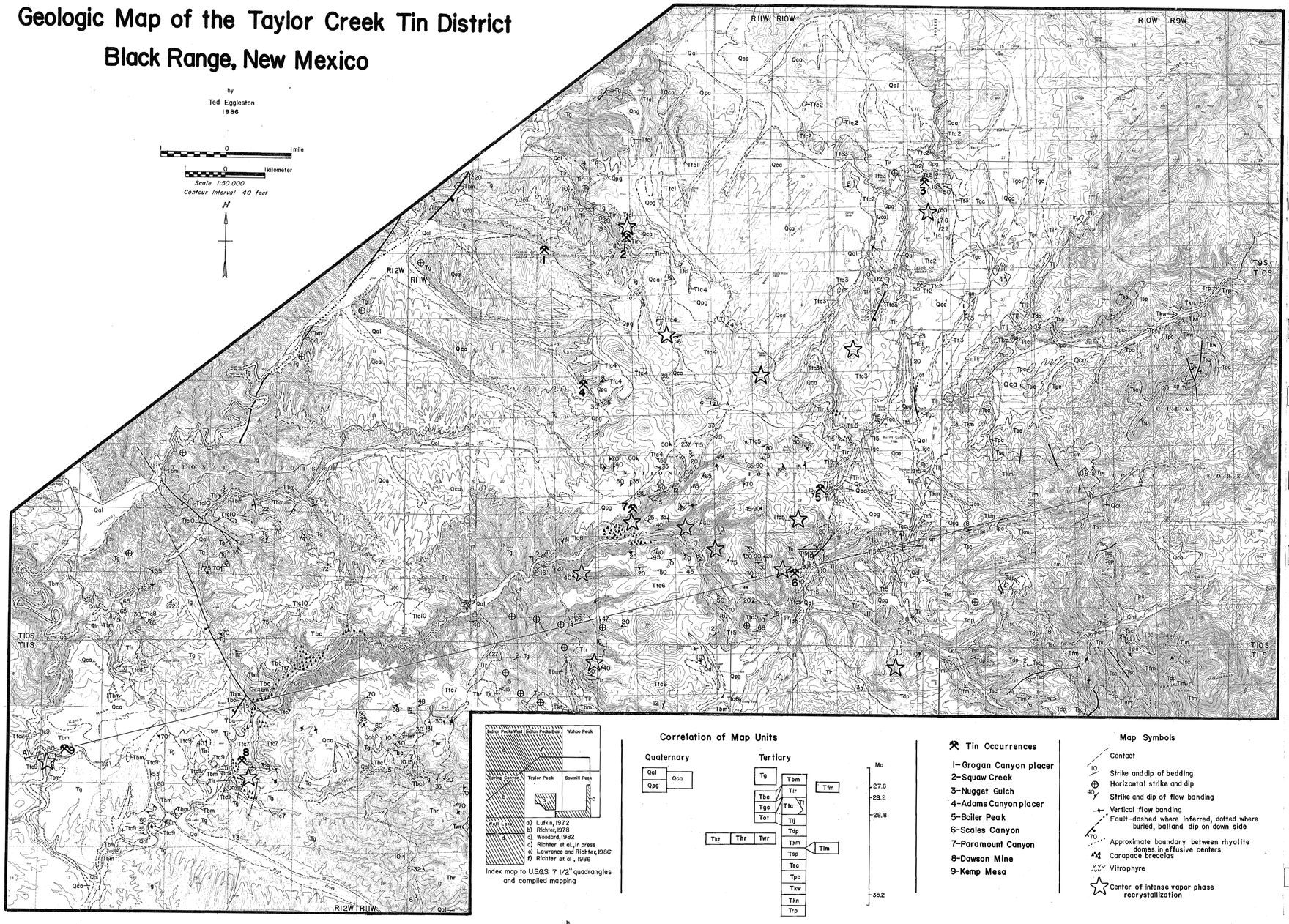
1986

0 1 mile
0 1 kilometer
Scale 1:50 000
Contour Interval 40 feet
N



Index map to USGS 7 1/2' quadrangles and compiled mapping

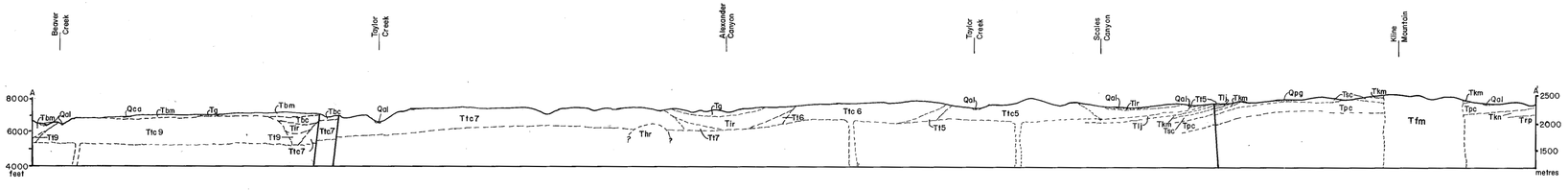
Correlation of Map Units

Tin Occurrences

1-Grogan Canyon placer
2-Squaw Creek
3-Nugget Gulch
4-Adams Canyon placer
5-Boiler Peak
6-Scales Canyon
7-Paramount Canyon
8-Dawson Mine
9-Kemp Mesa

Map Symbols

- Contact
- 10 Strike and dip of bedding
- Horizontal strike and dip
- 40 Strike and dip of flow banding
- Vertical flow banding
- Fault-dashed where inferred, dotted where buried, ball and dip on down side
- 70 Approximate boundary between rhyolite domes in effusive centers
- Carapace breccias
- Vitrophyre
- Center of intense vapor phase recrystallization



EXPLANATION

Qal Alluvial deposits (Quaternary). Poorly sorted, angular to subrounded alluvium in larger, active stream channels and flood plains.

Qca Alluvium and colluvium undivided (generally Quaternary). Alluvium and colluvium in small stream channels and on gently sloping hillsides.

Qpg Piedmont slope deposits (Quaternary). Poorly sorted, fine to coarse fluvial sedimentary material.

Tg Gila Conglomerate (Oligocene to Pliocene ?). Buff to white to red, poorly sorted, poorly to moderately indurated siltstone, sandstone, and clast- and matrix-supported conglomerate. Greater than 200 m thick.

Tbm Bearwallow Mountain Formation (Oligocene to Miocene ?). Basaltic andesite to latite lava flows with thin volcaniclastic sedimentary interbeds. Greater than 200 m thick.

Tfm rhyolite of Franks Mountain (Oligocene). Flow-banded, hypabyssal rhyolite intrusives. Generally porphyritic containing phenocrysts of quartz(3%) and sanidine (7%) in a granophyric groundmass. Most intrusives are silicified. Near the margins, argillic alteration produced kaolinite-alunite-chalcedony assemblages.

Tbc Bloodgood Canyon Tuff (28.2 Ma). Regional, buff to tan, moderately to densely welded, moderately crystal-rich ignimbrite. Contains phenocrysts of quartz (3%), sanidine (7%), and a trace of plagioclase, biotite, sphene, zircon, and opaque minerals. As much as 50 m thick.

Tir sandstone of Inman Ranch (Oligocene). More than 100 m of tuffaceous siltstone, sandstone, and conglomerate consisting of angular to rounded clasts of all the pre-existing lithologies in the region. Distinctive 1 to 2 m-thick massive sandstones. Thin, poorly welded ignimbrite is exposed near the top of the unit.

Tgc tuff of Garcia Camp (Oligocene). Cliff-forming (10 to 20 m), nonwelded, Crystal-rich ignimbrite. Contains phenocrysts of quartz (10%), sanidine (6%), biotite (1%), and a trace of amphibole, zircon, and opaque minerals in a vitroclastic groundmass. Pumice is abundant and locally imbricated.

Ttc Taylor Creek Rhyolite (28.2 Ma). As much as 300 m of crystal-rich, flow-banded, white to buff colored high silica rhyolite lavas. Near Boiler Peak and Wall Lake, a number of domes coalesce to form large eruptive centers. Individual domes consist of rhyolite containing 15 to 20% quartz and sanidine as 1 to 2 mm phenocrysts in subequal proportions. Rhyolites from the Taylor Creek eruptive center contain 30 to 40% quartz and sanidine as 5 to 8 mm phenocrysts. Plagioclase, biotite, and opaque minerals are present in trace quantities in all domes. Amphiboles and pyroxenes are rare. Groundmass in all cases is granophyric. Domes and eruptive centers are:

- Ttc 1-Squaw Creek Dome
- Ttc 2-Nugget Gulch Dome

Boiler Peak-Paramount Canyon eruptive center
- Ttc 3-Sawmill Canyon Dome
- Ttc 4-North Paramount Canyon Dome
- Ttc 5-Boiler Peak-Paramount Canyon Dome
- Ttc 6-Alexander Cienega Dome

Taylor Creek eruptive center
- Ttc 7-Taylor Creek Dome
- Ttc 8-Indian Creek Dome
- Ttc 9-Kemp Mesa Dome
- Ttc 10-North Taylor Creek Dome

Intense vapor phase-crystallization produces a punky, friable rock similar in appearance to poorly welded ignimbrite or argillically altered rhyolite. Carapace breccia mantles most domes. Tin mineralization is found below the carapace breccia of most domes.

Tt unnamed pyroclastic deposits (Oligocene). Generally nonwelded, thin ignimbrites, but surge and fall deposits are common. The number attached to the symbol corresponds to the Taylor Creek Rhyolite dome that the deposits mantle. As much as 100 m of stacked 0.01 to 3 m beds. Includes as much as 50 m of clast-supported breccia consisting of monolithic, mildly vesiculated clasts of Taylor Creek Rhyolite from 10 cm to 4 m in diameter in Scales Canyon. Agglutinates in the Nugget Gulch and Paramount Canyon areas are as much as 50 m thick.

Tot unnamed ignimbrite (Oligocene). Gray to tan, crystal-poor, nonwelded, multiple flow ignimbrite as much as 30 m thick containing 2 to 5% phenocrysts of sanidine and 10 to 15% dark gray to black pumice fragments. Possibly correlative with the La Jencia Tuff.

Tlj La Jencia Tuff (28.8 Ma). Densely welded, crystal-poor, regional ignimbrite. Contains phenocrysts of sanidine (6%) and a trace of quartz, biotite, and pyroxene in a gray to black groundmass. Foliated and locally lineated. 20 to 30 m thick.

Tkt rhyolite of Keith Tank (Oligocene). Vitric, flow banded, crystal-poor rhyolite lava containing phenocrysts of quartz (1%), plagioclase (1%), and a trace of sanidine and biotite. Abundant lithic fragments, many of which are gabbroic in composition. About 10 m exposed.

Twr rhyolite of Whitetail Canyon (Oligocene). Crystal-poor, finely flow-banded, gray rhyolite lava containing phenocrysts of plagioclase (1%), pyroxene (1%), and a trace of biotite, amphibole, and opaque oxides in a microtrachytic groundmass. Sparse vitrophyre has obvious perlitic cracks. More than 100 m thick.

Thr rhyolite of Hoyt Creek (Oligocene). A flow banded, virtually aphyric rhyolite lava containing phenocrysts of pyroxene (1%), and a trace plagioclase, amphibole, and zircon in a microtrachytic groundmass. More than 200 m thick.

Tdp rhyolite of Dolan Peak (Oligocene). High-silica, flow-banded, moderately crystal-rich rhyolite lavas containing 5 to 10% sanidine and 1 to 3% quartz phenocrysts in a spherulitic to granophyric groundmass. Locally tin-bearing. More than 200 m thick.

Tkm tuff of Kline Mountain (Oligocene). Thick sequence of very pumiceous, nonwelded, thinnly bedded, moderately crystal-rich rhyolite ignimbrites with 12 to 15% phenocrysts of sanidine and quartz and traces of plagioclase, biotite, opaque minerals, and zircon. Advanced argillic alteration produced a kaolinite-alunite-chalcedony assemblage. 0 to 200 m thick.

Tsp rhyolite of Sawmill Peak (Oligocene). Red, flow-banded, crystal-poor rhyolite lavas that contain 7 to 10% sanidine (as much as 8 m in length) and a trace of quartz, biotite, and opaque minerals as phenocrysts in a generally vitric groundmass. As much as 40 m thick.

Tlm tuff of Lookout Mountain (Oligocene) Crystal-rich, moderately welded rhyolite ignimbrite containing quartz and sanidine phenocrysts.

Tsc tuff of Stiver Canyon (Oligocene). As much as 40 m of crystal-poor to moderately crystal-rich, poorly welded, rhyolite ignimbrite. North of Kline Mountain, the unit contains phenocrysts of sanidine(2%), quartz(1%), and a trace each of biotite and opaque minerals in a vitroclastic groundmass. South of Kline Mountain, the unit contains phenocrysts of sanidine (15%), quartz (5%), and a trace each of biotite and opaque minerals in a vitroclastic groundmass. Plagioclase is notably rare.

Tpc basaltic andesite of Poverty Creek (Oligocene). As much as 200 m of basaltic andesite flows locally separated by thin volcaniclastic intervals.

Tkw tuff of Koko Well (Oligocene). As much as 60 m of poorly welded, crystal-poor, rhyolitic ignimbrite that contains about 1 to 5% phenocrysts of feldspar and a trace of quartz and biotite. Locally, the base of the unit consists of as much as 10 m of a moderately crystal-rich, rhyodacitic ignimbrite that contains sanidine (6%), plagioclase (3%), biotite (1%), and a trace of amphibole in a vitroclastic groundmass.

Tkn Kneeling Nun Tuff (35.23 Ma). As much as 200 m of crystal-rich, densely welded, rhyolitic ignimbrite containing phenocrysts of quartz (15%), sanidine (12%), plagioclase (5%), biotite (2%), and a trace of opaque minerals in a vitroclastic groundmass.

Trp Rubio Peak Formation (Oligocene). Basaltic andesite and andesite lava flows.