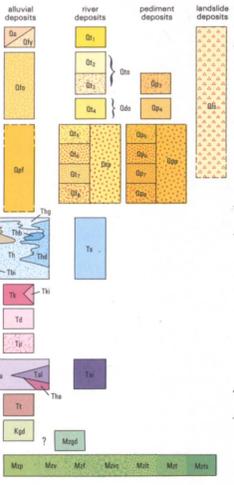
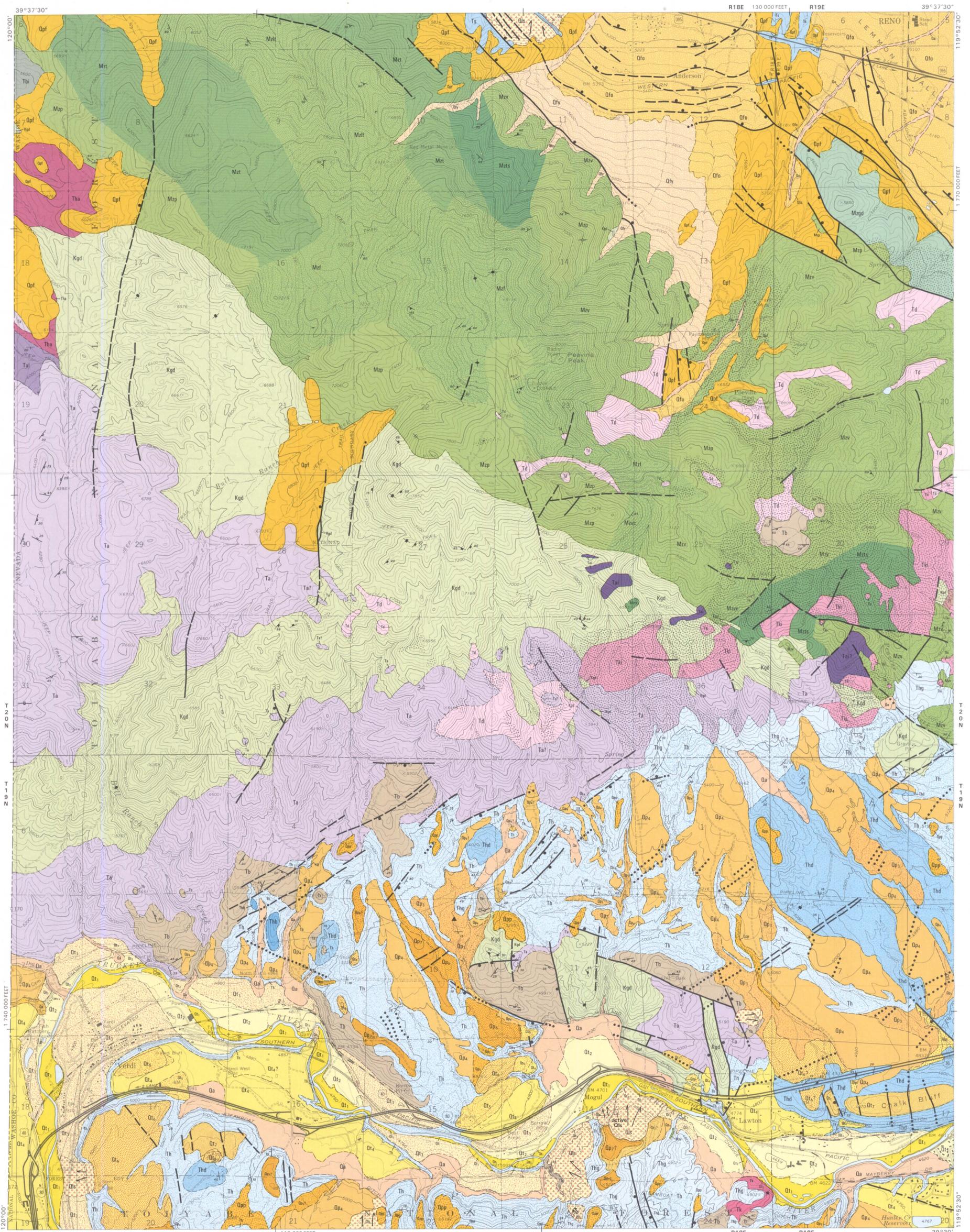


VERDI QUAD

GEOLOGY



Qa Sidestream and wash alluvium Light-brown to brown muddy, sandy pebble-cobble gravel to gravelly sand. Confined to, and debouching from, modern tributary channels.

Qf Young alluvial-fan deposits of Peavine Mountain Light-brown to light-grayish-brown muddy, sandy cobble to boulder gravel; angular to subangular metamorphic clasts; poorly sorted; poorly consolidated. Contains a strong reddish-brown argillic B horizon 0.6-1 m thick.

Qfo Old alluvial-fan deposits of Peavine Mountain Light-brown to brown muddy, sandy cobble to boulder gravel; angular to subangular metamorphic clasts; poorly sorted; moderately consolidated. Contains brown to reddish-brown argillic B horizon 0.6-1 m thick.

Qpf Alluvial-fan deposits of Peavine Mountain Reddish-brown to yellowish-brown clayey pebble to cobble gravel; clayey pebbly sand, and clayey sand; angular to subangular metamorphic clasts; very poorly sorted; moderately to well consolidated. Consists of dissected, linear remnants with strong reddish-brown argillic B horizon 1/2 m thick. May be montmorillonitic.

Qt1 Outwash and terrace deposits of the Truckee River Consist of a sequence of fluvial terraces in ascending order above the present river level: Qt1, lowest; Qt4, highest. Each deposit consists of a similar pale-brown to light-brownish-gray to brown sandy cobble to boulder gravel and gravelly sand. Clasts consist dominantly of subrounded to rounded andesite and granite with subordinate basalt and metamorphic rocks; moderately to poorly sorted; slightly to moderately consolidated. Qt1: late Holocene to modern deposits with little or no soil development. Qt2: Tahoe Outwash (Qt2) contains strong reddish-brown argillic B horizon 0.6-1 m thick; locally contains large (>3 m diameter) granitic boulders. Qt3: Donner Lake Outwash (Qt3) contains strong reddish-brown argillic B horizon 1-1.3 m thick; granitic clasts largely decomposed. Qt4, Qt5: pre-Donner Lake outwash and terrace deposits contain strong reddish-brown argillic B horizon 1.6 m or more thick. In part equivalent to the gravel of Reno of Bonham and Bingler (1973). Qt6: pre-Donner Lake deposits, undifferentiated.

Qp Pediment deposits of the Verdi Basin Consist of a sequence of thin deposit grades graded to corresponding outwash and terrace deposits in ascending order: Qp1, lowest; Qp4, highest. Each deposit consists of a similar light-brown to brown muddy cobble to boulder gravel and gravelly sand. Clasts consist dominantly of angular and subangular volcanic and metamorphic rocks with minor granitic rocks and reworked Qt deposits; very poorly sorted; moderately consolidated. Qp1: Taho-age deposit containing a

strong reddish-brown argillic B horizon 0.6 m thick. Contains 1- to 2-cm-thick light-gray volcanic ash (Wadsworth bed). Qp2: Donner Lake-age deposit containing a strong reddish-brown argillic B horizon 1-1.3 m thick. Qp3, Qp4: pre-Donner Lake-age deposits containing a strong reddish-brown argillic B horizon 1.6 m or more thick. Qp5: pre-Donner Lake-age deposits, undifferentiated.

Qls Landslide deposits Range in age from mid-Quaternary to modern.

Sandstone of Hunter Creek Equivalent to the Coal Valley Formation of Axelrod (1958) and the Truckee Formation of Thompson and White (1964). Consists of a Miocene to Pliocene age sedimentary sequence deposited within the Verdi Basin. The dominantly light-gray, bluish-gray, light-brown to brown, and yellowish-brown medium to coarse tuffaceous sandstone, sandy siltstone, and claystone; subordinate sandy conglomerate, and white to light-gray diatomaceous shale and siltstone. Locally carbonaceous with thin lignite seams. Contains plant fossils and scattered land-mammal fossils of Hemphillian to early Blancan age (Axelrod, 1958; J. R. Fitty, oral commun., 1986). An andesitic tuff interbedded with the leaf fossils is 5.9 m. old (Evernden and James, 1984). Thd dominantly white to light-gray diatomaceous siltstone (diatomite) and shale; subordinate light-brown to brown sandstone and conglomerate; thin-bedded to massive. The south of Truckee river, consists of reddish-brown to dark gray pebble to cobble gravel containing well-rounded andesite clasts and coarse sandstone. North of river, consists of brown cobble to boulder gravel containing subrounded volcanic and metamorphic clasts; locally heavily cemented by reddish-brown to red secondary iron oxide forming a ferricrete. The reddish-yellow baked and silicified diatomaceous siltstone; intruded by, or interbedded with, dark gray scoriaceous and pahoehoe-like basalt. Td: olive basalt. Flows of black basalt containing 1-mm phenocrysts of olivine in a fine intergranular matrix of plagioclase and pyroxene. Locally vesicular and may have platy jointing. Includes a laharic and fluvial unit near the Truckee River north of Verdi. Whole-rock dated by K-Ar methods at 8.6 m.y. (E. H. McKee, oral commun., 1987). Td: olive basalt intrusive; massive; similar to Td.

Ts Tertiary sedimentary rocks Stratigraphically equivalent to Th deposits. Light-gray to reddish-brown silty sandstone, tuffaceous sandstone, and pebble gravel; gray and yellowish-brown to reddish-brown claystone and siltstone; thin-bedded to massive.

Tk Kate Peak Formation Tk: gray, porphyritic biotite-hornblende andesite flows and lahars exposed west of Hunter Creek Reservoir. Tki: intrusive masses of gray porphyritic biotite-hornblende andesite. Characterized by elongate 5-mm-long hornblende and

white equant to elongate 5-mm-diameter plagioclase. Commonly hydrothermally altered.

Td Metadiorite Very dark gray, microcrystalline to microporphyratic porphyritic; plagioclase and pyroxene with rare biotite and quartz.

Tiv Rhyolite intrusive Flow-banded light-gray porphyritic rhyolite. Small (1 mm) quartz and feldspar phenocrysts in a fine-grained matrix.

Tal Andesite intrusive Medium- to dark-gray, brown weathering. Phenocrysts of plagioclase and 1-mm- to 1-cm-long hornblende.

Ta Andesite Ta: gray pyroxene andesite flows, dark-brown weathering; contains lesser amounts of undifferentiated hornblende-pyroxene andesite flow and lahars north of Verdi and hornblende-andesite flows near the lower contact of the unit on the south flank of Peavine Peak. Probably equivalent to the Alta Formation in the Virginia Range, and to andesite flows and lahars in the Carson Range. Tal: pyroxene andesite lahars. This hornblende plagioclase andesite. Gray porphyritic rock containing clear, pink-rimmed, 5-mm-diameter plagioclase, ophioclasts up to 5-mm-long, and rare biotite and pyroxene in a plagioclase matrix; distinctive grayish-pink weathering. Equivalent to a unit mapped as Kate Peak Formation in the Reno NW quadrangle (Soeller and Nielsen, 1980). Biotite dated by K-Ar methods at 16.0 m.y. (E. H. McKee, oral commun., 1987).

Tt Rhyolitic ash-flow tuff Occurs as highly altered rock at a single locality.

Kgd Granodiorite Gray medium-grained hornblende-biotite and biotite-hornblende granodiorite. Not normally deeply weathered, except for biotite-rich portions. Locally contains finer grained, mafic inclusions 10 cm or more in diameter. Mostly equivalent to the Mgd unit of Bonham and Bingler (1973). Biotite dated by K-Ar methods at 30.7 m.y. (E. H. McKee, oral commun., 1987).

Mgd Granodiorite Greenish-gray, medium-grained, hypidiomorphic-granular to porphyritic. Mafic minerals are altered to chlorite and epidote; plagioclase is partially altered to white mica.

Mzv Peavine sequence Mzv: undifferentiated metamorphic rocks, primarily of intermediate composition; this unit and following units are all metamorphosed to greenschist facies (amphibole near Kgd contact), and locally hydrothermally altered and bleached. The following units are described by dominant lithology: Mzv: predominantly light-gray, porphyritic meta-andesite and meta-dacite flows and hypabyssal intrusive rocks; the primary phenocryst minerals were probably plagioclase, hornblende, pyroxene and quartz (rare); metamorphic minerals include actinolite, chlorite, epidote, calcite, and albite. Mzf: light-gray, locally flow-

banded, felsic metavolcanic rock; sparsely porphyritic (originally plagioclase, biotite?, hornblende?, and rare quartz). Mvz: metamorphosed volcanic conglomerate and subordinate coarse feldspathic volcanic sandstone; cobbles and pebbles of andesite. Mtt: lithic-rich, metamorphosed, felsic to intermediate-composition ash-flow tuff. Mz: crystal and crystal-vitric tuff and probable tuff, like Mzt, but with rare or no lithic fragments. Mza: metamorphosed air-fall tuff; pyroclastic surge(?) deposits, and tuffaceous(?) feldspathic sandstone; massive to plane-bedded, medium gray.

Altered rock silicification and argillization.

Contact Dashed where approximately located.

Fault Dashed where approximately located; dotted where concealed. Ball on downthrown side.

Lineament or probable concealed fault.

Attitudes (inclined, vertical, horizontal):

- bedding
- primary foliation
- secondary foliation
- compaction foliation
- flow jointing
- secondary jointing

Tephra locality

John W. Bell and Larry J. Garside, 1987
Fieldwork in support of the U.S. Geological Survey COGEMAP program.

Scale 1:24,000
CONTOUR INTERVAL 40 FEET
DOTTED LINES ARE 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

0 0.5 1 kilometer
0 1000 2000 3000 4000 5000 feet

**NEVADA BUREAU OF MINES AND GEOLOGY
MACKAY SCHOOL OF MINES**

Base map: U.S. Geological Survey Verdi 7 1/2' quadrangle, 1967
First edition, first printing, 1987; 1000 copies
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