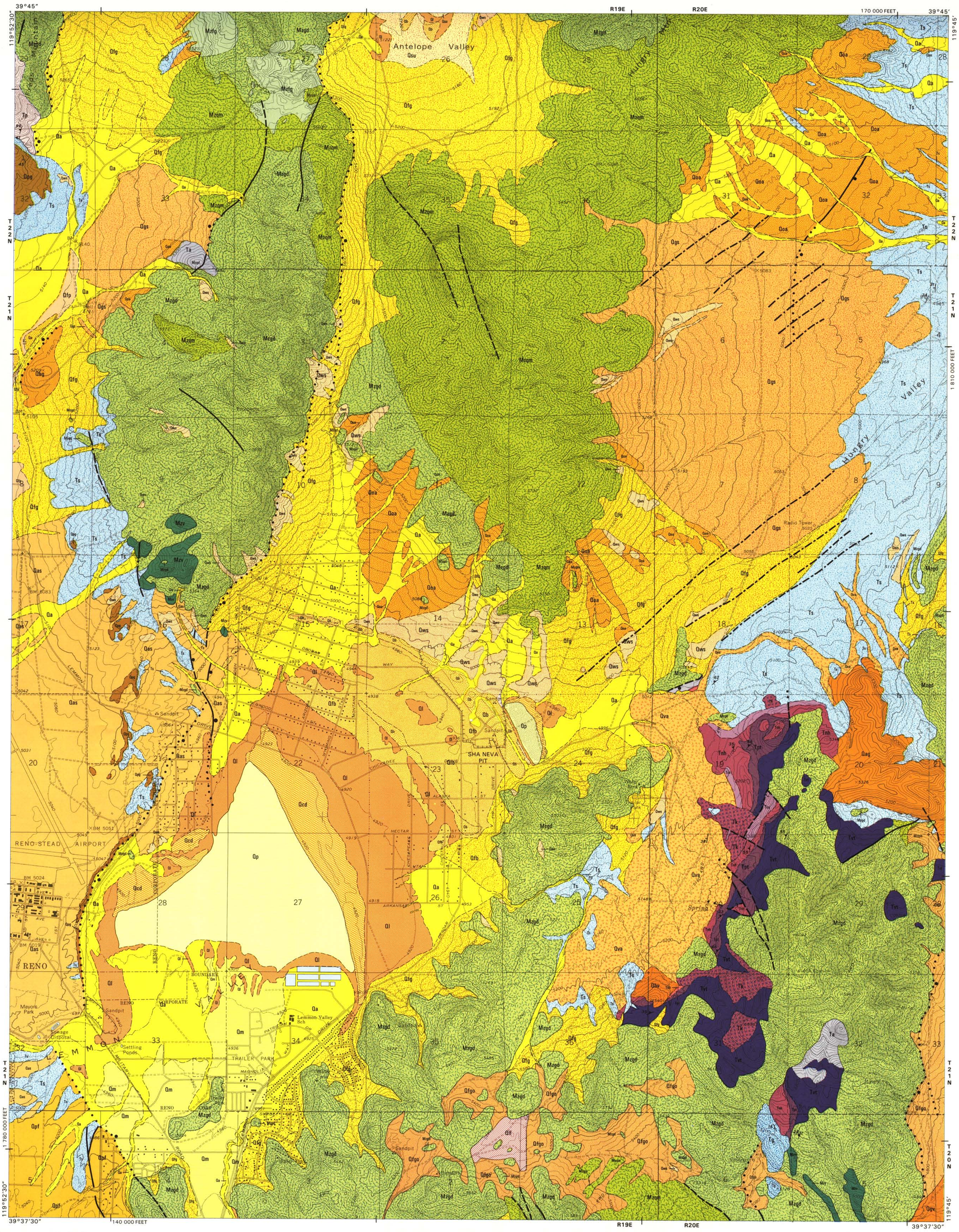
PREPARED IN COOPERATION WITH THE U.S. GEOLOGICAL SURVEY

RENO NE QUAD



GEOLOGY

Qlf **Landfill**

Qp **Playa deposits** Light-brown to brown, mod. well sorted slightly sandy to granular mud with interbedded fine sand and silt.

Qsu **Undifferentiated sand** Yellowish-brown to tan, mod. sorted, arkosic med. to fine sand. Composed of beach and windblown sand deposits.

Qws **Windblown sand** Yellowish- to orangish-brown, poorly to mod. well sorted, arkosic med. sand. Forms stabilized dunes and actively accumulating deposits.

Qa **Sheetwash, stream channel, and other Holocene alluvium** Gray to yellowish-brown, poorly sorted cobbly to pebbly sand and muddy sand to mod. well sorted fine to coarse sand; predominantly arkosic. Stippled pattern indicates gravelly alluvium derived from Tertiary volcanic rocks.

Qfg **Alluvial fan deposits** Gray-brown to yellowish-brown, mod. well sorted to very poorly sorted granular coarse sand to sandy boulder gravel; predominantly arkosic. Forms broad, gently sloping, relatively undissected fan surfaces and steeper colluvial slopes with cambic soil development.

Qm **Alluvium of Military Road** Yellowish- to reddish-brown, poorly sorted granular sand to pebbly muddy sand derived from Qpf. Grades from pebbly deposits in southwest to sands at distal edge near Lemmon Valley playa.

Qfp **Axial-stream floodplain deposits** Brown to yellowish-brown, well-sorted slightly sandy mud to fine sand.

Qcd **Clay dunes** Brown to gray-brown, loose, mod. well sorted muddy fine sand and fine to med. sand-size aggregates of clay derived from playa and lake deposits. Stabilized and breached by recent stream channels.

Ql **Deposits of late Pleistocene Lake Lemmon Ql: Lake deposits** Pale-yellow to gray, well-sorted slightly sandy silt to clay. Flat-lying; cut by recent stream channels. **Qfb: Foreboach deposits** Brown to yellowish-brown, poorly sorted, arkosic granular muddy sand to mod. well sorted very fine sand. **Qb: Beach bar deposits** Yellowish-tan to brown, mod. to poorly sorted granular sand to muddy sand; arkosic, generally unconsolidated. Mammoth bone dated (^{14}C) at 10,440 ± 490 yrs (TX-4960); camel bones also found.

Qfgo **Older alluvium, colluvium, and decomposed granite** Grayish-tan to reddish-brown, very poorly sorted muddy coarse sand and sandy pebble gravel to gravelly sand; arkosic, unconsolidated. Strongly argillic (B_2t) soil overlying weak duripan developed locally.

Qas **Alluvium of Stead Airport** Reddish-brown, very poorly sorted, arkosic pebbly muddy sand derived from Qpg and Qpf. Mod. developed argillic (B_2t) soil. Forms thin (≤ 2 m) veneer overlying Ts.

Qgs **Granitic alluvial fan deposits** Pinkish- to yellowish-brown, poorly to very poorly sorted granular sand. Well-developed argillic (B_2t) soil. Pebble and cobble ventifacts common at surface.

Qva **Volcanic alluvium** Brownish-red to dark-yellowish-brown, very poorly sorted pebbly muddy sand to muddy gravel and bouldery gravelly sand. Mod. dissected. Well-developed argillic (B_2t) soil. Forms thin (≤ 2 m) veneer overlying Ts..

Qpg **Pediment gravels** Tan to dark-reddish-brown, very poorly sorted cobbly sand to sandy gravel. Clasts predominantly granitic; some Tertiary volcanic and Mesozoic metavolcanic rock fragments. Strongly argillic (B_2t) soil with well-developed duripan (Cca).

Qpf **Alluvial fan deposits of Peavine Mountain** Reddish-brown to dark-yellowish-brown, poorly to very poorly sorted, poorly bedded muddy sandy pebble gravel. Commonly forms multicolored desert pavement composed primarily of altered andesite pebbles, arkosic sand, and lesser amounts of jasper, quartz, and metavolcanic clasts. Well-developed argillic (B_2t) soil. Forms thin (≤ 2 m) veneer overlying Ts.

Qgv **Old gravelly alluvium** Tan to reddish-brown, very poorly sorted cobbly muddy fine sand to gravelly sand. Predominantly arkosic with some rounded, carbonate-coated volcanic pebbles and cobbles (probably derived from Tg). Poorly indurated with strongly developed soil profile.

Qoa **Old alluvium** Tan to brown, very poorly sorted, mod. consolidated pebbly silt to unconsolidated gravelly sand and muddy sandy pebble gravel. Occurs as deeply dissected fan remnants. Strongly developed argillic (B_2t) soil with weak duripan (Cca).

Qag **Old alluvial gravels** Dark-reddish-gray, very poorly sorted sandy cobble to boulder gravel. Predominantly Tertiary volcanic clasts; minor granitic clasts. Strongly developed soil with duripan.

Qbv **Boulder alluvium** Tan to dark-gray, very poorly sorted sandy boulder gravel. Clasts predominantly granitic with lesser amounts of Tertiary tuffs, Kate Peak Formation, Peavine sequence, and Mesozoic basalt.

Qbg **Granitic boulder alluvium** Gray to brown, very poorly sorted sandy boulder gravel. Well-developed argillic (B_2t) soil.

Ts **Tertiary sediments** Cream to gray to pale-green, thick, interbedded alluvial and fluvio-lacustrine basin-fill sediments. Includes interbedded, unconsolidated to mod. well consolidated arkosic sandy gravel, gravelly sand, granular to very fine grained sand, tuffaceous sandstone, volcanic ostracod-bearing sandstone, slightly diatomaceous siltstone, and thin lenses of air-fall tuff. Commonly highly dissected and overlain by veneer of pebbly sand or lag gravel. Probably equivalent in age to sandstone of Hunter Creek (Bonham and Bingler, 1973).

Tg **Tertiary gravels** Gray to brown, very poorly sorted, mod. indurated, stratified bouldery cobble gravel to sandy gravel with thin, interbedded lenses of volcanic sandstone. 60% clasts of Tertiary volcanic rocks and basalt; 40% highly weathered to disintegrated granitic clasts. Well-developed duripan (Cca) > 3 m thick.

Tk **Kate Peak Formation** Gray to reddish-gray, porphyritic to glomeroporphyritic hornblende-biotite andesite flows. Vuggy, highly resistant to weathering. Forms rugged, bouldery outcrops.

Tp **Pyramid sequence** Dark-gray to reddish-purple, porphyritic basaltic andesite flows and agglomerate. Vesicular to scoriaceous near flow tops.

Ta **Alta Formation** Dark-gray to reddish-brown, thin, porphyritic pyroxene andesite flows. Distinctive platy fracture.

Note: In previous publications, the Tertiary tuffs described below were considered units of the Hartford Hill Rhyolite. However, this nomenclature has been abandoned (Bingler, 1978), and they are now distinct formations.

Tcs **Tuff of Chimney Springs** Orangish-yellow to yellowish-brown crystal tuff. 50-60% smoky quartz, sanidine, and minor biotite phenocrysts in a partially welded, devitrified, rhyolitic matrix.

Tnh **Nine Hill Tuff** Reddish-purple to pale-orangish-red, pumiceous, rhyolite vitric tuff. Densely welded, devitrified, with stretched and flattened pumice lapilli. Vugs with vapor-phase crystallization products common. Forms distinct ridges.

Tpt **Pumice tuff** Pale- to dark-gray, very pumiceous vitric-crystal tuff. Usually poorly welded, fine- to med.-grained, glassy, shard-rich ash with abundant pumice lapilli; phenocrysts of sanidine, quartz, few lithic fragments. Includes densely welded perlitic vitrophyre. Easily weathered, rarely crops out.

Tvt **Vitric tuff** Cream to yellowish-tan to pale-purple rhyolitic to rhyodacitic vitric to vitric-crystal tuff. Includes a variety of poorly to densely welded tuffs with sanidine, sanidine-smoky quartz, plagioclase-biotite, or biotite phenocrysts in a devitrified, locally pumiceous, fine-grained matrix. Forms resistant, knobby outcrops where densely welded.

Mzqm **Quartz monzonite** Pink to pale-gray, massive, med.- to coarse-grained, equigranular to porphyritic quartz monzonite to granite. Includes extensive aplite, graphic granite, quartz veins, and pegmatite dikes. Generally deeply weathered; forms low, rounded outcrops.

Mzgd **Granodiorite** Light- to dark-gray, fine- to coarse-grained, equigranular to porphyritic hornblende-biotite granodiorite. Mod. to highly fractured and faulted. Cut by basalt and aplite-pegmatite dikes and quartz and epidote veins. Highly resistant to weathering; forms blocky, jagged outcrops.

Mzfg **Foliated granitic rocks** Pinkish- to dark-gray, fine-to coarse-grained, equigranular, weakly foliated to gneissic diorite to granodiorite.

Mzv **Peavine sequence** White to dark-gray rhyolitic to andesitic metavolcanic rocks. Commonly porphyritic; copper mineralization locally. Forms resistant, knobby outcrops that are highly fractured to sheared in mineralized areas.

Contact Dashed where approximately located, dotted where concealed

Fault Dashed where approximately located, dotted where concealed, queried where possible fault. Ball on downthrown side

Lineaments

35 **Strike and dip of bedding**

15 **Strike and dip of compaction foliation or flow planes**

Outline of sand pit excavations

REFERENCES

Bingler, E. C. (1978) Abandonment of the name Hartford Hill Rhyolite Tuff and adoption of new formation names for middle Tertiary ash-flow tuffs in Carson City-Silver City area, Nevada: U.S. Geological Survey Bulletin 1457D, 19 p.

Bonham, H. F., Jr., and Bingler, E. C. (1973) Geologic map of the Reno quadrangle, Nevada: Nevada Bureau of Mines and Geology Map 4Ag, scale 1:24,000.

Gail E. Cordy, 1985
Assisted by André Mansour

Mapping in part based on Soeller, S. A. (1978) Quaternary and environmental geology of Lemmon Valley, Nevada: unpublished M.S. thesis, University of Nevada-Reno.

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Scale 1:24,000
CONTOUR INTERVAL 20 FEET
DOTTED LINES ARE 10-FOOT CONTOURS

0 0.5 1 kilometer
0 0.5 1 mile
0 1000 2000 3000 4000 5000 feet

Base map: U.S. Geological Survey Reno NE 7½′ quadrangle, 1967
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