

**Buffalo Mountain Project
Reconnaissance Geologic Map and sampling of limestone**

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Map area formations (Natchez Pass Fm., Weaver Rhyolite of the Koipato Group), are described in the Pershing County Report (Johnson, 1977, NBMG Bull. #89):

Triassic Natchez Pass Formation:

Johnson (1977, p. 16-17) describes the Natchez Pass Formation as largely composed of massive carbonate rocks, limestone, and dolomite as secondary replacement of limestone. All carbonate samples that I tested reacted vigorously to 10% HCl, suggesting that dolomite, if present, was accompanied by calcite.

The Natchez Pass Formation consists of two members. In the Humboldt Range the lower member, just south of the map area, consists of cliff-forming massive carbonate rocks which interfinger with mafic volcanic rocks that thin to the north. The upper member consists of a basal section of non-resistant impure limestone with subordinate volcanic and terrigenous clastic rocks, which grade upward into massive carbonate rocks similar to the lower member. Siliceous clastic strata in the upper part consist primarily of chert and quartzite clasts, with felsite pebbles derived from the Lower Triassic Koipato Group.

Fossil evidence dates the lower member as Late Middle Triassic, and the upper member as Late Triassic.

Weaver Rhyolite of the Koipato Group:

The weaver Rhyolite is recognized only in the Humboldt Range, where it overlies the lithologically similar Rochester Rhyolite (Johnson, 1977, p. 13). The Weaver has the higher percentage of phenocrysts and a greater amount of tuffaceous sedimentary rocks. The lower part of the Weaver consists of pale-colored flows with prominent phenocrysts of quartz and albitized feldspar in a microcrystalline groundmass that locally displays flow-banded and/or spherulitic textures.

These flows are overlain by tuffaceous sedimentary rocks (siltstone, sandstone-quartzite, and conglomerate) derived from older parts of the Koipato Group. The highest part of the Weaver contains pale-colored flows and subordinate tuff with minor feldspar and rare quartz phenocrysts. The flow rocks display spherulitic and nodular aspects.

Ammonite impressions in fine-grained sedimentary rocks of the upper Weaver suggest an Early Triassic age.

Description of Natchez Pass Limestone in the map area:

Limestone outcrops exist only in the southeastern portion of the Buffalo Mountain claims held by Silver Reserve Corp. Limestone underlies several prominent ridges which coalesce from the east, northeast and south to form parts of the architecture of 8206 ft Buffalo Mountain. The limestone outcrops and samples were subdivided as six types based on color, grain size, bedding thickness, and associated iron oxide or chert:

- La dark-grey, fine-grained, thick (1-5 ft) bedded limestone, with measurable attitude; a ridge and ledge former.
- Lb dark-grey, fine-grained, thin (1-8 in) bedded or platy limestone, with measurable attitude; found near type La.
- Lc white or light-grey fine-grained limestone, weathering light-tan; forms low outcrops without measurable attitude.
- Ld medium-grey, medium-grained massive limestone; may contain secondary calcite, giving a medium- and light-grey spotted appearance.
- Le medium-grey or dark-grey, fine or medium-grained, massive limestone, without measurable bedding; has wide distribution.
- Lf dark-grey fine-grained, bedded limestone (La or Lb), with significant presence (2-10%) of FeOx crusts on bedding planes; a sponge of FeOx covers and insulates knobs of dark-grey limestone, such that the volume of FeOx may be less than 10% by volume or weight.
- Lg dark grey fine-grained, bedded limestone (La or Lb), with FeOx and discontinuous clasts of black chert, which are conformable with bedding.

Description of Weaver Rhyolite and siliceous metasedimentary rocks in the map area:

- sr siliceous rhyolite; quartz-eye rhyolite; quartz & feldspar leuco-granite; Oxidized "siliceous rock" was initially useful in contrast to the outcrops and cliffs of dark grey limestone, seen from a distance.
- rb flow-banded rhyolite light grey and white (in the central area NE of Buffalo Mountain summit); spherulitic rhyolite, white spherules have concentric growth aspect of devitrified glass. Spherulitic rhyolite gives a first impression of pebble conglomerate.
- ry rhyolite dike; (one occurrence, dark-brown groundmass with quartz eyes).
- qt arenaceous quartzite; orange-brown; widespread; where associated with conglomerate the outcrop has knobby appearance in contrast with more even texture of rhyolite outcrop; minor arkosic sandstone.
- cgl quartz- or chert-pebble conglomerate (most average ½ in, rare cobbles as large as 4" across); spherulitic rhyolite (near flow-banded rhyolite) can be confused with conglomerate, and the two may be juxtaposed.
- slst siltstone: platy, oxidized (tan, yel-brn to rd-brn), rarely silicified; calc-siltstone near contact with limestone.
- mdst mudstone breccia/conglomerate; dark grey or bluish-grey, near siltstone.
- maf mafic (plagioclase-amphibole) rock, fine-grained dark grn-gry sill or flow. Some mapped dark igneous occurrences, under binocular microscope display a dark cryptocrystalline (devitrified glass) matrix, and not mafic.

Note: The acronyms listed may appear on the outcrop map as field terms.