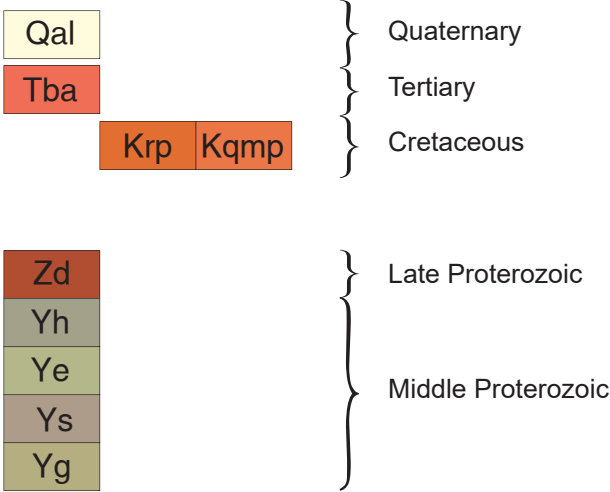


CORRELATION DIAGRAM



UNIT DESCRIPTIONS

- Qal** Alluvium (Quaternary)—Unconsolidated sediment including minor colluvium.
- Tba** Basalt (Tertiary)—Black, mafic aphanitic dikes.
- Krp** Rhyodacite porphyry (Cretaceous)—Greenish-gray groundmass with 1–3 cm phenocrysts of white oligoclase and 1 mm phenocrysts of black hornblende.
- Kamp** Quartz monzonite porphyry (Cretaceous)—Light pinkish-gray groundmass of sanidine, quartz, oligoclase, and minor ferromagnesian minerals. 1–5 cm phenocrysts of salmon-colored orthoclase.
- Zd** Diorite (Late Proterozoic)—Dark gray to greenish-black phanerite, composed of andesine-labradorite, augite, biotite, magnetite, and minor quartz forming sills and dikes. Weathers a characteristic rusty chocolate brown and commonly haloed by zones of hornfels.
- Yh** Helena Formation (Middle Proterozoic)—Gray dolomitic limestone and calcareous siltstone.
- Ye** Empire Formation (Middle Proterozoic)—Light green shiny shale and siltstone.
- Ys** Spokane Formation (Middle Proterozoic)—Predominantly maroon shale and siltstone. Many red, fine-grained sandy siltstones, with minor light green shale layers. Maroon beds turn dark purple to black near dikes and sills.
- Yg** Greyson Formation (Middle Proterozoic)—Light to dark gray and greenish-gray to black shales and siltstones, commonly weathering yellow tan.

MAP SYMBOLS

- Contact: dashed where approximately located
- Thrust fault: teeth on upthrown block; dashed where approximately located; dotted where concealed
- Normal fault: dashed where approximately located; dotted where concealed; ball and bar on downthrown side
- Strike and dip of inclined beds
- Vertical beds
- Veins of white quartz
- Syncline: showing trace of axial plane and plunge direction where known; dashed where approximately located



Figure 1. Quartz monzonite porphyry exposures on the south side of Roberts Mountain; view from above looking south.

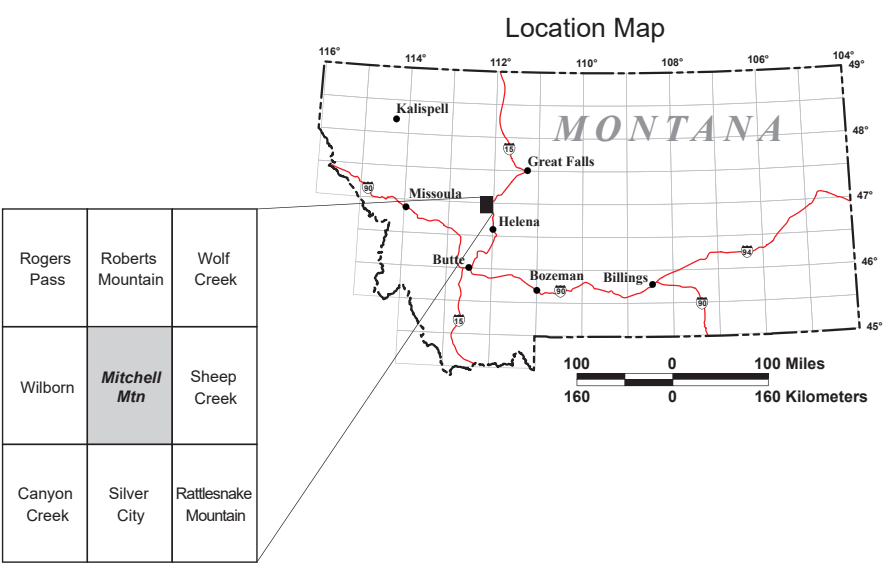
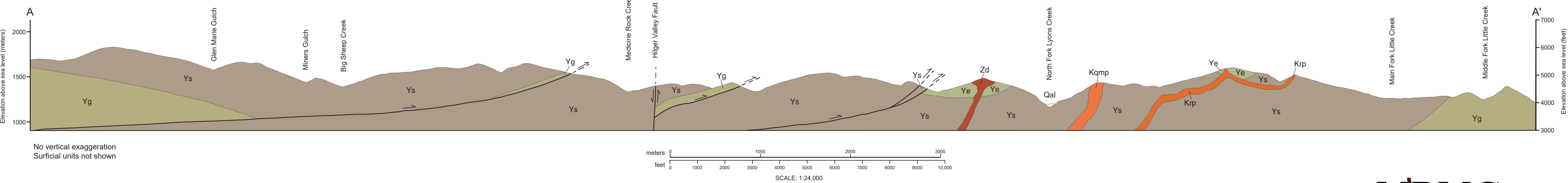


Figure 2. White bull quartz exposures; view from the east looking west.



Figure 3. Exposures of Spokane Shale; view from the south looking north.

CROSS SECTION A–A'



GIS production: Paul Thale, MBMG. Map layout: Susan Smith, MBMG.



MBMG Open-File Report 663  
Geologic Map of the Mitchell Mountain 7.5' Quadrangle  
West-central Montana

Martin L. Bregman