

EXPLANATION

Quaternary

- Qal Alluvium
Includes Pleistocene gravel 9 locally along Arkansas River and Chalk Creek
- Qp Peat
- Qit Landslide and talus deposits

Pleistocene

- Qe₉ Gravel with sandy and silty matrix; volcanic ash locally in gravels 2 and 3. Includes gravels 1-8; gravel 9 included with Qal
- Qe₈
- Qe₇
- Qe₆
- Qe₅
- Qe₄
- Qe₃
- Qe₂
- Qe₁

UNCONFORMITY

Miocene and Pliocene

- Td Dry Union Formation
White, gray, and tan clays, silts, sands, and gravels; locally tuffaceous and bentonitic

UNCONFORMITY

Miocene

- Tb Browns Canyon Formation
Brown, yellow-brown, and gray tuffaceous siltstone and claystone; locally silicified or calcareous. Conglomeratic arkose generally at base

UNCONFORMITY

Oligocene

- Tnr, Tno, Tnp Nathrop Volcanics
Tnr, gray rhyolite flow; Tno, perlitic obsidian; Tnp, pumiceous tuff and breccia at base

UNCONFORMITY

Eocene(?)

- Tf, Ta Ash-flow tuff; red-brown to pink and gray rhyolitic welded tuff; generally contains thin black vitrophyric welded tuff and gray to yellow argillized and opalized tuff at base

UNCONFORMITY

PRECAMBRIAN

- qm Tabular intrusive rocks
g, granite; a, aplites; d, pegmatite; l, lamprophyre; dp, dacite porphyry; d, diabase
- gm Gneissic quartz monzonite
Gray to pink foliated intrusive rock
- bg Banded gneiss
Light to dark quartz-feldspar-biotite gneiss with rare layers of marble and skarn
- h Hornblende gneiss
Black or black and white gneiss, consisting chiefly of hornblende, andesine, quartz, and biotite

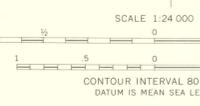
Geological Symbols

- Contact, showing dip
Dashed where approximately located
- Vertical contact
- Fault, showing dip
U, upthrown side; D, downthrown side. Dashed where approximately located; dotted where concealed
- Vertical fault
- Antiform
Drawn on foliation or layering
- Synform
Drawn on foliation or layering
- Strike and dip of beds
- Inclined
Strike and dip of foliation
- Bearing and plunge of lineation
Symbol combined with strike and dip of foliation
- Strike and dip of joint
- Fluorspar vein, showing dip
Dashed where approximately located

Other Symbols

- Quartz or chalcedony vein; locally with specularite, orthoclase, magnetite, pyrite, chalcocopyrite, or traces of purple fluorite
- C Shaft
- C, copper deposit; V, vermiculite deposit
- Portal of adit
- Prospect
gd, gold placer; pl, perlite
- Gravel pit
- Quartzite quarry
- U.S. Geological Survey fossil vertebrate locality
- U.S. Geological Survey paleobotany locality
- Fluorspar deposits in T. 51 N., R. 8 E.

Base from U.S. Geological Survey
1:62,500, 1956
Minor modifications of cultural
features, 1961
10,000-foot grid based on Colorado
coordinate system, central zone

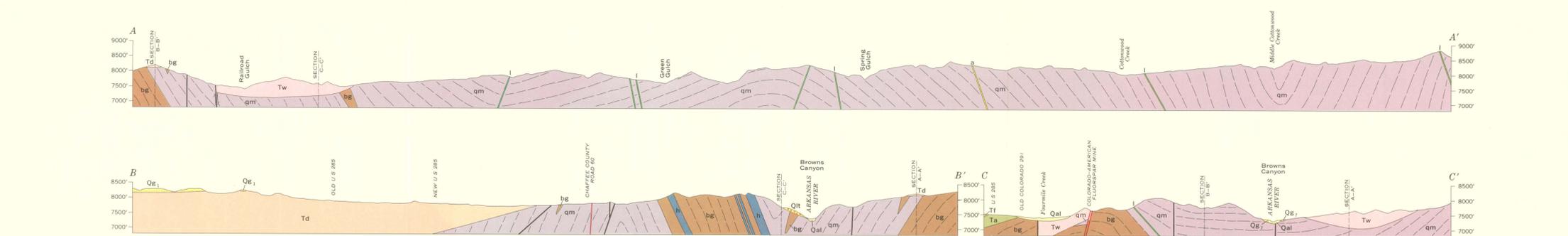


SOURCES OF GEOLOGIC DATA

A. R. E. Van Alstine, 1958-61; mapping scale 1:20,000

B. D. C. Cox, assisted by J. O. Fisher, D. M. Henderson, and T. A. Steven, 1943-45; geologic map on planimetric base at 1:12,000. Modified by R. E. Van Alstine, 1953 and 1958-61

- 1. Alderman SE 1/4 sec. 34
- 2. Colorado-American NW 1/4 sec. 34
- 3. Snowflake SW 1/4 sec. 27
- 4. Delay and Lloyd SW 1/4 sec. 27
- 5. Chimney Hill NE 1/4 sec. 28
- 6. Manganese Hill NE 1/4 sec. 28
- 7. White King NW 1/4 sec. 27
- 8. Blue Stone NW 1/4 sec. 27
- 9. Fuzzle NW 1/4 sec. 27
- 10. Last Chance SE 1/4 sec. 22



GEOLOGIC MAP OF THE PONCHA SPRINGS NE QUADRANGLE, CHAFFEE COUNTY, COLORADO