

U.S. GEOLOGICAL SURVEY
CHARLES D. WALCOTT
DIRECTOR

STRUCTURE SECTIONS

COLORADO NEEDLE MOUNTAINS QUADRANGLE

LEGEND

SHEET SYMBOL SECTION SYMBOL

Rock streams
(loose rock and soil
having the appearance
of talus occupies the
floors of cirques)

Landslides
(a confused mixture of
soil and large and small
blocks of rock from cliffs
and slopes above)

SEDIMENTARY ROCKS

Recent

Alluvium
(unstratified fine sand
and gravel)

Moraines
(glacial gravel, un-
stratified, in mounds
and ridges)

Pleistocene

Telluride
conglomerate
(pebbles and boulders
of schist, quartzite and
limestone)

UNCONFORMITY

Cutler
formation
(sandstone, gray, conglom-
erate, and some calcare-
ous shale; prevailing
color red)

Rico formation
(sandstone, limestone, and
shale, red or gray color;
fossiliferous)

Hermosa formation
(sandstone, shale, and
limestone of grayish
color; fossiliferous)

Molas formation
(red calcareous shale
containing limestone
and chert nodules;
fossiliferous)

UNCONFORMITY

Ouray limestone
(white or light pink,
massive, fossiliferous)

Elbert formation
(thin bedded, calcareous
and sandy shale, buff
and yellow, with pseudo-
morphs of pale crystals;
fossiliferous)

UNCONFORMITY

Ignacio quartzite
(thin bedded, gray or pink,
very quartzite with trail
markings on shaly partings)

UNCONFORMITY

Uncompahgre
formation
(massive and thin bedded,
light to dark quartzite,
locally conglomeratic,
with dark shale, slate,
and argillite, Aus)

Vallerois
conglomerate
(lower part consists largely
of greenstone schist, but
upper part contains
pebbles of quartzite, porphy-
ry, hematite, and magnetite)

METAMORPHIC ROCKS
OF UNKNOWN ORIGIN

Schist and gneiss
(quartz, mica, schist and
amphibole with some
granite-gneiss)

IGNEOUS ROCKS

Intrusive rhyolite
(an irregular, cross-
cutting body)

Quartz latite
(flows and tuffs)

Andesite
(mainly in flows)

San Juan tuff
(blue to gray andesitic
tuff and breccia)

Granite-
porphyry
(dikes, crosscutting bodies,
and laccolithic forms)

Legend is continued
on the left margin.

LEGEND

IGNEOUS ROCKS (continued)

Lamprophyric
dikes
(minette and hornstone)

Basic
dikes
(diabase and greenstone)

Granodiorite

Trimble
granite
(fine grained, gray
biotite granite)

Eolus granite
(coarse, pink hornblende
biotite granite)

Whitehead
granite
(reddish pink biotite
granite)

Tennile
granite
(pink and gray
biotite granite)

Twilight
granite
(light grayish pink
biotite granite, which
predominates in the
area indicated)

Living
greenstone
(dark green, massive
and schistose, with
some granite-quartzite
and quartzite)

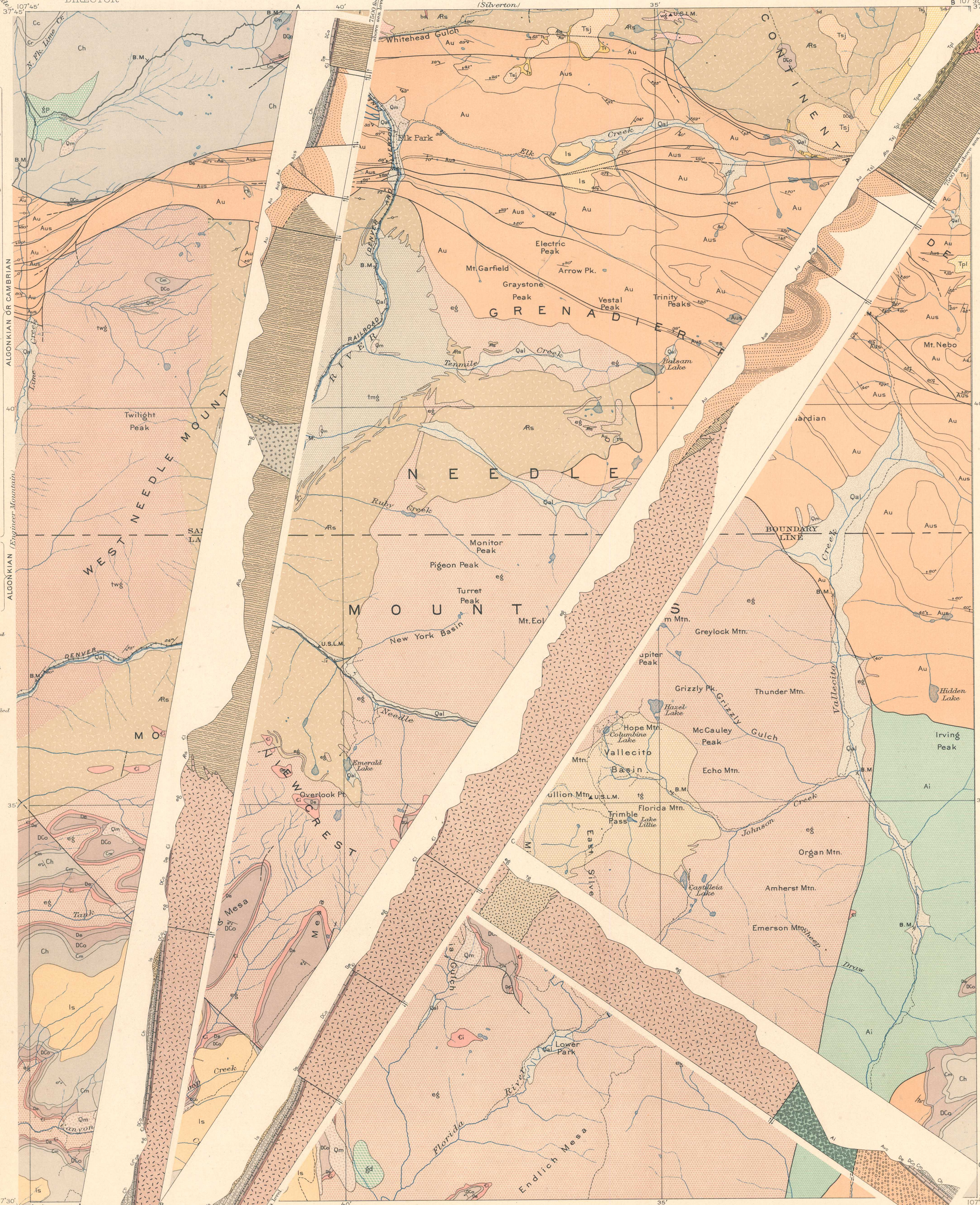
Known faults
(doubtful location indicated
by dashes)

Concealed faults
(covered by younger
deposits)

180° Strike and dip of stratified
rocks

Strike of vertical beds

Earlier than Ignacio quartzite



E.M. Douglas, Geographer in charge.
Topography and Control by W.M. Beaman.
Surveyed in 1899 and 1900.

Geology by Whitman Cross and Ernest Howe,
assisted by J. Morgan Clements.
G.W. Stose, and Albert Johannsen.
Surveyed in 1900, 1901, and 1903.

Projection based on U.S.C. and G.S. data of 1900.
Projection of Engineer M. sheet based on earlier data.
Edition of Jan. 1906.