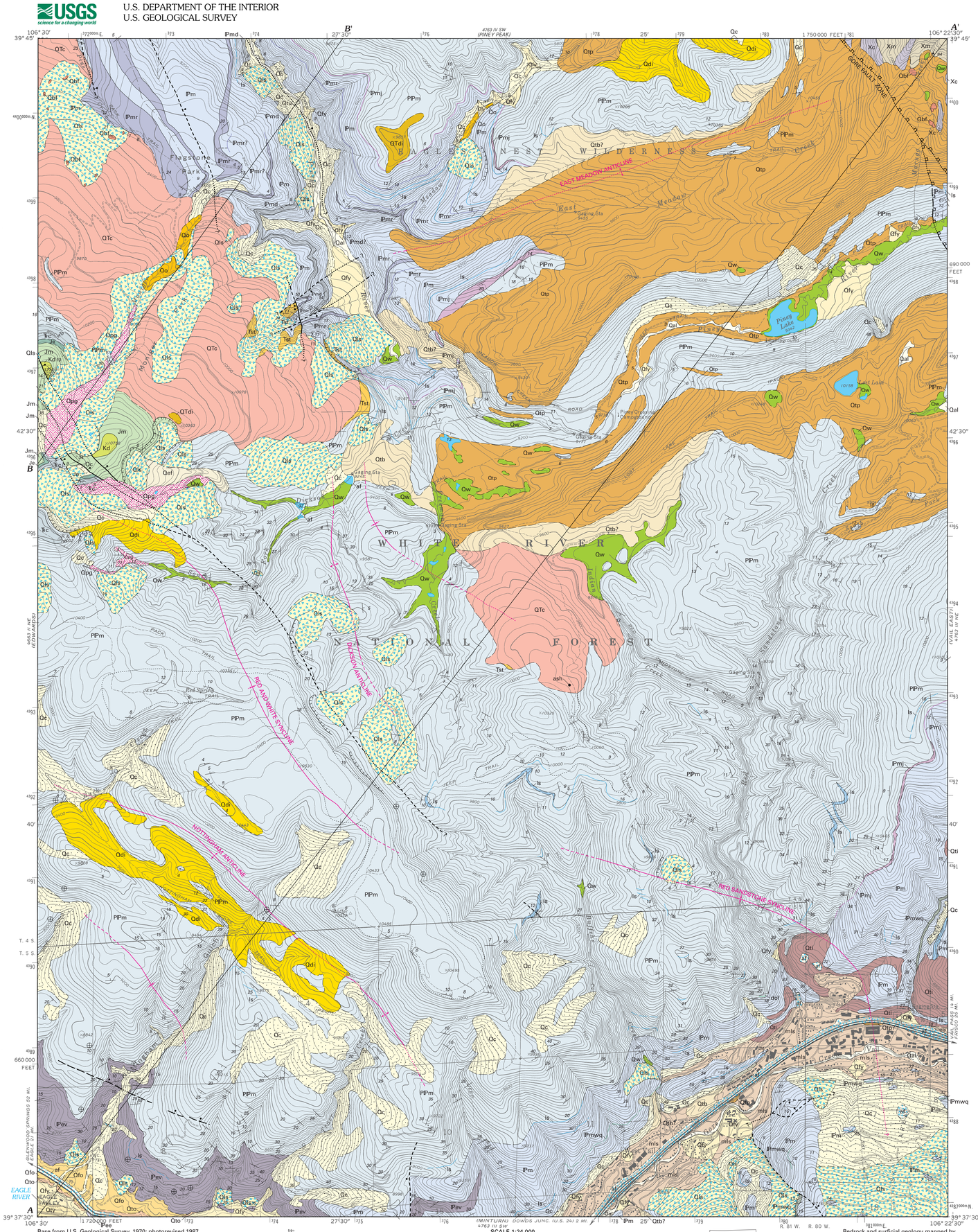
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

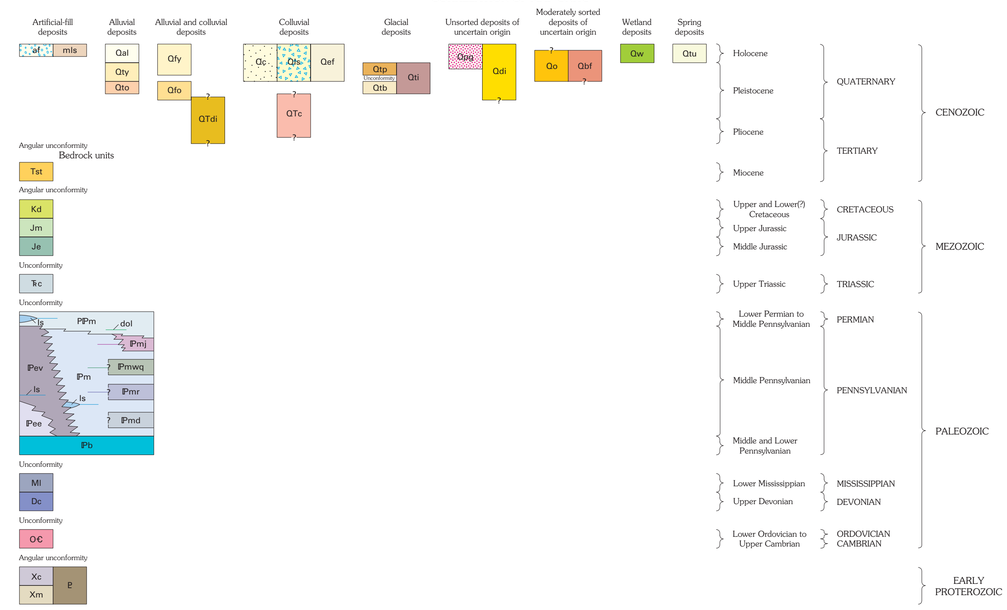
MISCELLANEOUS FIELD STUDIES MAP MF–2369
Version 1.0
Pamphlet accompanies map



Base from U.S. Geological Survey, 1970; photorevised 1987.
Polyconic projection. 1927 North American Datum.
10,000-foot grid based on Colorado coordinate system, central zone.
1,000-meter Universal Transverse Mercator grid ticks, zone 13.

Bedrock and surficial geology mapped by Robert Scott and Dave Lidke in 1999.
GIS work done by Daniel Grunwald in 2000.
Editing and digital cartography by Alessandro J. Donatich
Manuscript approved for publication August 6, 2001

CORRELATION OF MAP UNITS



LIST OF MAP UNITS

SURFICIAL UNITS

Artificial-fill deposits
- af — **Artificial fill (latest Holocene)**
- mls — **Modified land-surface deposits (latest Holocene)**

Alluvial deposits
- Qal — **Alluvium (Holocene)**
- Qty — **Younger terrace alluvium (late Pleistocene)**
- Qto — **Older terrace alluvium (late middle Pleistocene)**

Alluvial and colluvial deposits
- Qfy — **Younger fan alluvium and debris-flow deposits (Holocene and latest Pleistocene)**
- Qfo — **Older fan alluvium and debris-flow deposits (middle Pleistocene)**
- QTdi — **Older diamicton (middle Pleistocene? to Pliocene?)**

Colluvial deposits
- Qc — **Colluvium, undivided (Holocene and late Pleistocene)**
- Qls — **Landslide deposits (Holocene to late Pleistocene)**
- Qef — **Earth-flow deposit (Holocene to late Pleistocene)**
- QTc — **Older colluvium (middle Pleistocene? to Pliocene?)**

Glacial deposits
- Qtp — **Pinedale Till (late Pleistocene)**
- Qtb — **Bull Lake Till (late to late middle Pleistocene)**
- Qti — **Till, undivided (late to late middle Pleistocene)**

Unsorted deposits of uncertain origin
- Qpg — **Periglacial deposits (Holocene and late Pleistocene)**
- Qdi — **Younger diamicton (Holocene to middle? Pleistocene)**

Moderately sorted deposits of uncertain origin
- Qo — **Outwash of periglacial deposits and Pinedale Till (Holocene? and late Pleistocene)**
- Qbf — **Boulder-field deposits (Holocene to late Pleistocene?)**

Wetland deposits
- Qw — **Wetland deposits (Holocene)**

Spring deposits
- Qtu — **Tufa deposits (Holocene)**

BEDROCK UNITS

- Tst — **Tuffaceous sedimentary rocks (Miocene)**
- Kd — **Dakota Sandstone (Upper and Lower? Cretaceous)**
- Jm — **Morrison Formation (Upper Jurassic)**
- Je — **Entrada Sandstone (Middle Jurassic)**
- Ꞧc — **Chinle Formation (Upper Triassic)**
- ℙPm — **Maroon Formation (Lower Permian to Middle Pennsylvanian)**
- ℙev — **Eagle Valley Formation (Middle Pennsylvanian)**
- ℙee — **Eagle Valley Evaporite (Middle Pennsylvanian)**
- ℙm — **Minturn Formation (Middle Pennsylvanian)**
  - ℙmj — **Jacque Mountain Limestone Member**
  - ℙmwq — **White Quail Limestone Member**
  - ℙmr — **Limestone beds of the Robinson Limestone Member**
  - ℙmd — **Dolomite member**
- ℙb — **Belden Formation (Middle and Lower Pennsylvanian)**—Shown in cross section *A–A'* only
- Ml — **Leadville Limestone (Lower Mississippian)**—Shown in cross sections only
- Dc — **Chaffee Group (Upper Devonian)**—Shown in cross sections only
- O€ — **Ordovician and Cambrian units, undivided**—Shown in cross sections only
- Xc — **Cross Creek Granite (Early Proterozoic)**
- Xm — **Migmatite (Early Proterozoic)**
- Ᵽ — **Early Proterozoic rocks, undivided**—Shown in cross sections only

---

Contact—Dashed were approximately located

Contact between fault and surficial unit deposited against the fault—Short hachures on the surficial unit side

ls — **Unnamed limestone beds in the Maroon, Minturn, and Eagle Valley Formations**—Dashed where approximately located

dol — **Unnamed dolomite bed approximately located in the Maroon Formation**

Trace of beds in the Maroon and Eagle Valley Formations in cross section *A–A'*

Limit of abundant fragments of chert on the Maroon Formation

Contact across facies change between the Eagle Valley and Minturn Formations and facies change and (or) normal contact between the Eagle Valley Formation and Eagle Valley Evaporite in cross section *A–A'*—Queried where uncertain

Normal fault—Long dashed where approximately located; short dashed where inferred; dotted where concealed; queried where uncertain. Bar and ball on downthrown side; arrows show relative offsets in cross sections *A–A'* and *B–B'*

High-angle reverse fault—Dashed where approximately located; dotted where concealed. Rectangles on upper plate. Arrows show relative offsets in cross section *A–A'*

Intrusive contact—Diapiric intrusion of evaporite into younger units shown in cross section *A–A'*

Landslide scarp—Long hachures on downslope side

Anticline—Dashed where approximately located; dotted where concealed

Syncline—Dashed where approximately located; dotted where concealed

Strike and dip of bedding

10 — **Inclined**

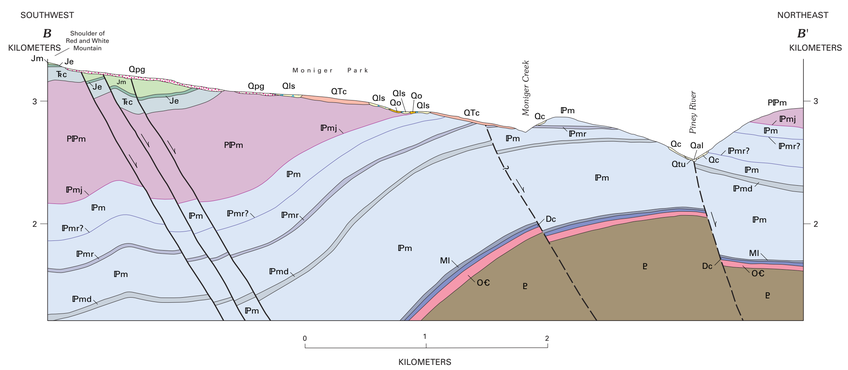
Horizontal

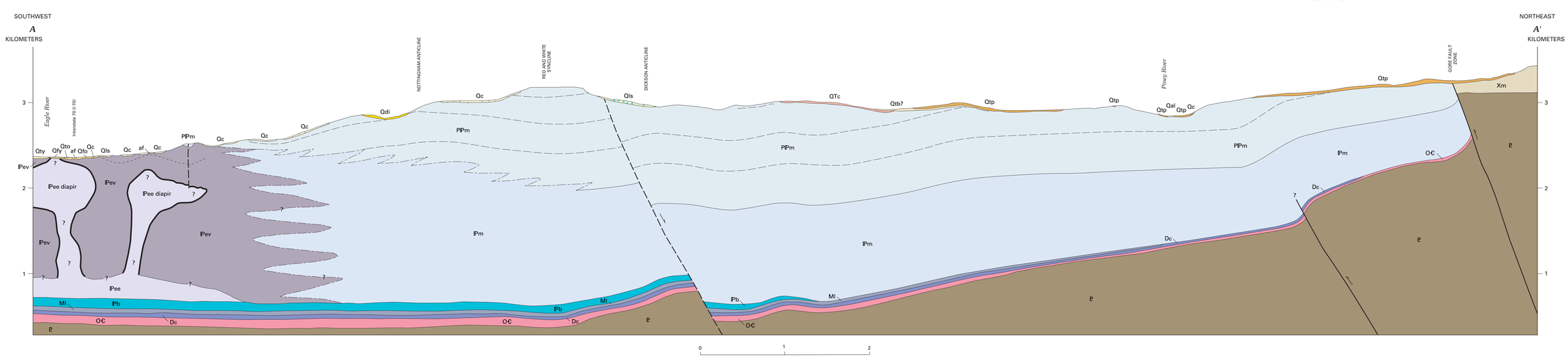
84 — **Strike and dip of inclined foliation**

x — **Prospect pit**—Chrysocolla in small vein west of Piney River

Adit—Extensive gossan in dolomite west of Piney River

ash — **Ash locality**—In road cut near center of map area





GEOLOGIC MAP OF THE VAIL WEST QUADRANGLE, EAGLE COUNTY, COLORADO

By
Robert B. Scott, David J. Lidke, and Daniel J. Grunwald

2002

Any use of trade names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Geological Survey

This map was produced on request, directly from digital files, on an electronic plotter

For sale by U.S. Geological Survey Information Services
Box 25286, Federal Center, Denver, CO 80225
1-888-ASK-USGS

ARC/INFO coverages and a PDF for this map are available at
http://geology.cr.usgs.gov/pub/mf-maps/mf-2369