

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

By Karl S. Kellogg, Bruce Bryant, and Margaret H. Redsteer

2003

MISCELLANEOUS FIELD STUDIES MAP MF-2375

Version 1.0

*Pamphlet accompanies map*

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

Base from U.S. Geological Survey, 1970

Photorevised 1987

Polyconic projection; longitude of central meridian 105.5°

North American Datum of 1927; 10,000-foot grid based on

Colorado coordinate system, central zone; 1,000-meter grid ticks, zone 13

Geology mapped by K. Kellogg, B. Bryant, and M. Redsteer, 1999, and by B. Bryant,  
1969; assisted in the field by G. Murray

Digital map layout by Bill Sowers

Preparation of GIS files for map layout by Nancy Shock

Manuscript approved for publication October 15, 2002

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This map was produced on request, directly from  
digital files, on an electronic plotter. It is also  
available as a PDF file at <http://geology.cr.usgs.gov>

## LIST OF MAP UNITS

<b>s</b>	<b>Snowfield (latest Holocene)</b>
<b>af</b>	<b>Artificial fill (latest Holocene)</b>
<b>Qa</b>	<b>Alluvium (Holocene)</b>
<b>Qlsy</b>	<b>Recent landslide deposits (Holocene)</b>
<b>Qf</b>	<b>Fan deposits (Holocene and upper Pleistocene)</b>
<b>Qt</b>	<b>Talus (Holocene and upper Pleistocene)</b>
<b>Qdf</b>	<b>Debris-flow deposits (Holocene and upper Pleistocene)</b>
<b>Qr</b>	<b>Rock-glacier deposits (Holocene and upper Pleistocene)</b>
<b>Qw</b>	<b>Wetland deposits (Holocene and upper Pleistocene)</b>
<b>Qac</b>	<b>Alluvium and colluvium, undivided (Holocene and upper Pleistocene)</b>
<b>Qc</b>	<b>Colluvium (Holocene and upper Pleistocene)</b>
<b>Qls</b>	<b>Landslide deposits (Holocene and upper Pleistocene)</b>
<b>Qfm</b>	<b>Felsenmeer (Holocene and Pleistocene)</b>
<b>Qbf</b>	<b>Boulder field (upper? Pleistocene)</b>
<b>Qtp</b>	<b>Pinedale Till (upper Pleistocene)</b>
<b>Qtb</b>	<b>Bull Lake Till (middle Pleistocene)</b>
<b>Qd</b>	<b>Diamicton (middle to lower Pleistocene)</b>
<b>Ti</b>	<b>Dike rocks of intermediate to felsic composition (Tertiary?)</b>
<b>P<sup>1</sup>Pm</b>	<b>Maroon Formation (Lower Permian to Middle Pennsylvanian)</b>
<b>P<sup>1</sup>m</b>	<b>Minturn Formation, undifferentiated (Middle Pennsylvanian)</b>
<b>P<sup>1</sup>m<sub>j</sub></b>	<b>Jacque Mountain Limestone Member</b>
<b>P<sup>1</sup>m<sub>u</sub></b>	<b>Upper sandstone and conglomerate member</b>
<b>P<sup>1</sup>m<sub>wq</sub></b>	<b>White Quail Limestone Member</b>
<b>P<sup>1</sup>m<sub>m</sub></b>	<b>Middle member</b>
<b>P<sup>1</sup>m<sub>r</sub></b>	<b>Robinson Limestone Member</b>
<b>P<sup>1</sup>m<sub>rl</sub></b>	<b>Individual limestone bed</b>
<b>P<sup>1</sup>m<sub>l</sub></b>	<b>Lower member</b>
<b>P<sup>1</sup>m<sub>ls</sub></b>	<b>Individual limestone bed</b>
<b>P<sup>1</sup>Єu</b>	<b>Pennsylvanian to Cambrian units, undifferentiated—Shown on cross section B-B' only</b>
<b>P<sup>2</sup>cd</b>	<b>Clastic dike (lower Paleozoic?)</b>
<b>Dp</b>	<b>Parting Formation (Upper Devonian)</b>
<b>Єp</b>	<b>Peerless Formation (Upper Cambrian)</b>
<b>Єs</b>	<b>Sawatch Quartzite (Upper Cambrian)</b>
<b>Early Proterozoic rocks</b>	
<b>Xu</b>	<b>Early Proterozoic rocks, undifferentiated—Shown only in cross sections Rocks of the Cross Creek batholith (Early Proterozoic)</b>
<b>Xap</b>	<b>Aplitic granite</b>
<b>Xg</b>	<b>Cross Creek Granite</b>
<b>Xdi</b>	<b>Diorite</b>
<b>Xgb</b>	<b>Gabbro</b>
<b>Xm</b>	<b>Migmatitic biotite gneiss (Early Proterozoic)</b>

**Xbg**

**Biotite gneiss (Early Proterozoic)**

MAP SYMBOLS

**Contact**—Dashed where approximately located; dotted where concealed; showing dip where known

**Fault or prominent fracture**—Dashed where approximately located; dotted where concealed. Showing dip where known. For some faults, no apparent offset interpreted from air photographs

**Normal fault**—Dashed where approximately located; dotted where concealed. Ball and bar on down thrown side. Dip of fault plane shown where known

**Reverse fault**—Dashed where approximately located; dotted where concealed; rectangles in upper plate

**Thrust fault**—Dotted where concealed. Teeth on upper plate. Dip of fault plane shown where known

**Strike-slip fault**—Dashed where approximately located; dotted where concealed; arrows show relative slip direction

**Mylonitic shear**—Generally parallel to Proterozoic Homestake shear zone (Tweto and Sims, 1963)

**Anticline**—Showing trace of axial plane. Dotted where concealed

**Syncline**—Showing trace of axial plane. Dotted where concealed

**Strike and dip of beds**

**Inclined**

**Vertical**

**Overturned**

**Horizontal**

**Approximate strike and dip of beds**

**Inclined**

**Strike and dip of foliation**

**Inclined**

**Vertical**

**Bearing and plunge of lineation**

**Strike and dip of foliation and bearing and plunge of associated lineation**

**Strike and dip of small fault or fracture**

**Inclined**

**Vertical**

**Letter indicates locality referred to in text**