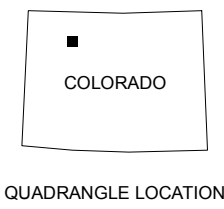
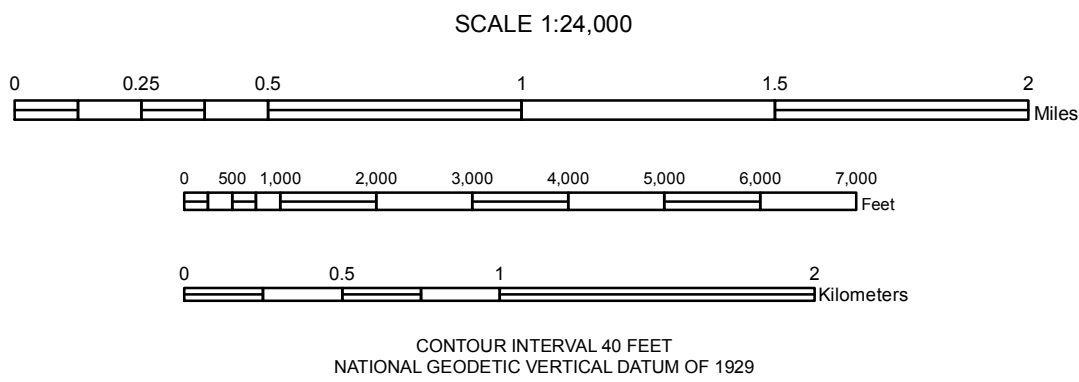
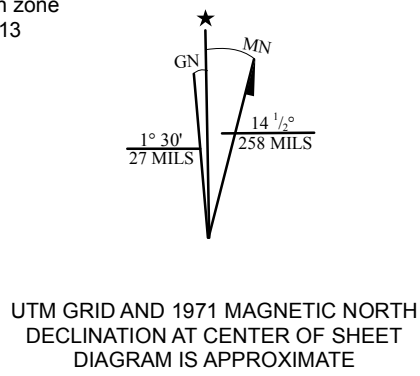




Base from U.S. Geological Survey, 1971  
Lambert Conformal Conic Projection, 1927 North American Datum  
10,000-foot grid based on Colorado coordinate system, north zone  
1,000-meter Universal Transverse Mercator grid ticks, zone 13



1	2	3
4	5	
6	7	8

- 1 Breeze Mountain
- 2 Hayden
- 3 Mount Harris
- 4 Pagoda
- 5 Dunckley
- 6 Slide Creek
- 7 Pagoda Peak
- 8 Dunckley Pass

Geology mapped in 2010  
GIS and cartography by Pangaea Cartographic, LLC

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John W. Hickenlooper, Governor  
State of Colorado  
Mike King, Executive Director  
Department of Natural Resources  
Vincent Matthews  
State Geologist and Director  
Colorado Geological Survey

## LIST OF MAP UNITS

The complete description of map units and references are included in the accompanying  
Authors' Notes booklet

## SURFICIAL DEPOSITS

### HUMAN-MADE DEPOSITS

- af Artificial fill (late Holocene)
- dr Disturbed and/or reclaimed ground (late Holocene)

### ALLUVIAL DEPOSITS

- Qa Alluvium (Holocene to late Pleistocene)
- Qac Alluvium and colluvium, undifferentiated (Holocene to late Pleistocene)
- Qg Older gravel deposits (late to middle Pleistocene)
- Surficial gravel lag deposits (late to middle Pleistocene)

### ALLUVIAL FAN DEPOSITS

- Qf Alluvial fan deposits (late Holocene)
- Qfo Older alluvial fan deposits (middle Holocene to late Pleistocene)

### MASS WASTING DEPOSITS

- Qls Landslide deposits (Holocene to early(?) Pleistocene)
- Qscr Sheet wash, colluvial, and rock fall deposits, undifferentiated (Holocene)
- Qt Talus deposits (Holocene)

## BEDROCK UNITS

- Tb Basalt flows and necks (late Oligocene)
- Tbp Browns Park Formation (late Oligocene)

### Lewis Shale (upper Cretaceous)

- Klsl Lewis Shale, lower part of main body

### Williams Fork Formation of the Mesaverde Group (Upper Cretaceous)

- Kwbw Big White Sandstone Member
- Kwu Williams Fork Formation, upper part
- Kwt Twentymile Sandstone Member
- Klst Tongue of Lewis Shale
- Kwst Sub-Twentymile Sandstone Member
- Kwl Williams Fork Formation, lower part

### Iles Formation of the Mesaverde Group (Upper Cretaceous)

- Kit Trout Creek Sandstone Member
- Kmt Tongue of Mancos Shale
- Ki Iles Formation
- Kidl Double Ledge Sandstone Member
- Kito Tow Creek Sandstone Member

### Mancos Shale (Upper Cretaceous)

- Kmu Mancos Shale, upper part of main body
- Kmlb(?) Loyd(?) Sandstone Member
- Kmwg Wise Gulch Sandstone Member
- Kmbg Berry Gulch Sandstone Member
- Kmss Sharon Springs Member
- Kmp Prairie Canyon Member
- Kms Smoky Hill (Niobrara) Member
- Kml Mancos Shale, lower part of main body—shown on cross section only

- Contact—Dashed where approximately located; dotted where concealed in strip mined areas
- Fault—Dashed where approximately located; dotted where concealed; upthrown (U) and downthrown (D) sides marked where evident
- Anticline—End arrow indicates direction of plunge
- Syncline—End arrow indicates direction of plunge
- Landslide scarp
- Strike and Dip of inclined bedding or contacts—showing direction and angle of dip
- Strike and Dip of inclined joints or fractures—showing direction and angle of dip
- Strike and Dip of faults—showing direction and angle of dip
- Fossil collection location—Includes USGS Mesozoic Locality Number
- Alignment of cross section