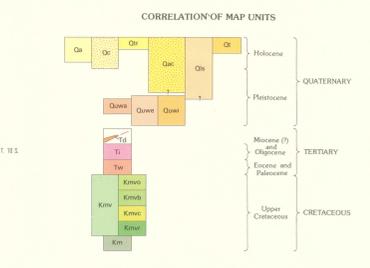


Table 1.—Drill-hole elevations

[Asterisk (*) indicates that only geophysical logs were used to determine lithology and coal beds; all other elevations are from logs of drill holes. T. D. indicates total depth of drill hole.]

| Drill-hole no. | Map Name | Drill-hole location | Drill-hole elevation (ft.) | Drill-hole elevation (m.) |
|--|----------|-----------------------|----------------------------|---------------------------|
| 1 | 2 | 3 | 4 | 5 |
| Section A-A'—Dak Mesa to Archaic Creek | | | | |
| 1 | ER-7-5 | 135 82W 20 NE SE 8320 | 7268 | 1353 |
| 2 | ER-7-5 | 135 82W 15 SW SE 8360 | 8323 | 1530 |
| 3 | ER-7-7 | 135 82W 14 NW SW 7460 | 8798 | 883 |
| 4 | ER-7-7 | 135 82W 11 SW SW 7450 | 8778 | 1860 |
| 5 | ER-7-7 | 135 82W 12 SE SE 8331 | 8472 | 1800 |
| 6 | ER-7-7 | 135 81W 1 SW SW 7120 | 8440 | 1283 |
| 7 | ER-7-7 | 135 81W 2 SW SW 7130 | 8323 | 1844 |
| 8 | ER-7-7 | 135 81W 4 SW SW 7340 | 8180 | 1509 |
| 9 | ER-7-7 | 135 81W 5 SW SW 7380 | 8180 | 1882 |
| 10 | ER-7-7 | 135 81W 7 NW SE 8480 | 8489 | 566 |
| 11 | ER-7-7 | 135 81W 7 NW SE 8480 | 8489 | 566 |
| 12 | ER-7-7 | 135 81W 7 NW SE 8480 | 8489 | 566 |
| 13 | ER-7-7 | 135 80W 5 NW SE 8332 | 8340 | 814 |
| 14 | ER-7-7 | 135 80W 5 NW SE 8332 | 8340 | 814 |
| 15 | WSE-2 | 135 80W 11 SW NW 8330 | 8560 | 883 |
| 16 | WSE-2 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 17 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 18 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 19 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 20 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 21 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 22 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| Section B-B'—Archaic Creek to Snowflake Creek | | | | |
| 23 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 24 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 25 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 26 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 27 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 28 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 29 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 30 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 31 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 32 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 33 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 34 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 35 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 36 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 37 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 38 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 39 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 40 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 54 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 60 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 61 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 63 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 66 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 75 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 81 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 82 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 83 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 84 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 89 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 90 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
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| 94 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 95 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 96 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 97 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 98 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 99 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |
| 100 | 1-T-1 | 135 80W 11 SW SE 7886 | 8380 | 2087 |



DESCRIPTION OF MAP UNITS

QUATERNARY SURFICIAL DEPOSITS (QUATERNARY)

- Qa** Alluvium (Holocene)—Clay, silt, sand, gravel, and boulders; larger components are subangular to rounded, well sorted to poorly sorted, commonly stratified; deposited in stream channels.
- Qc** Collium (Holocene)—Clay, silt, sand, gravel, and boulders; larger components are angular to subangular, commonly derived from bedrock above or beneath deposit; deposited by sheet wash or by slow, down-slope movement. May locally include boulders, alluvial deposits, and bedrock.
- Qt** Terrace and rock glacier deposits (Holocene)—Locally include areas of bedrock and colluvial, alluvial, and landslide deposits.

CRETACEOUS

- M** Mancos Shale (Cretaceous)—Clay, silt, sand, gravel, and boulders; heterogeneous to poorly sorted; cracks and scars are locally common in upper part; hummocky topography and local closed depressions are common near base of deposits; formed by various combinations of slumping, sliding, and flowing. Bedrock is locally exposed in upper part of slide area. Terrain within a landslide may range from new scarps, cracks, flows, and bulges to subdued, hummocky topography which is locally covered by mudflows and alluvium that range in age from historic to prehistoric times.
- R** Rollins Sandstone (Cretaceous)—Clay, silt, sand, gravel, and boulders; which commonly are sorted and stratified. Occurs about 100-400 ft (30-120 m) above the present stream drainage; may locally include small deposits of alluvium and collium.

INTRUSIVE ROCKS

- T** Intrusive rocks (Miocene and Oligocene)—Includes laccolts, sills, and dikes composed of porphyritic granodiorite and quartz monzonite, which commonly are porphyritic. Locally includes chert zones near to host rocks.

SEDIMENTARY ROCKS

- W** Wasatch Formation (Eocene and Paleocene)—Horizontal (mostly various shades of brown, gray, and red) claystone and mudstone with local lenses of sandstone, volcanic sandstone, and basal conglomerate. Large laccolts and mudflows are common in close proximity to steep slopes. May contain small, unmapped Quaternary laccolts, alluvium, collium, and other unconsolidated deposits. Volcanic sandstones and conglomerates are locally common in the lower 100-200 ft (30-60 m) of unit in the Muddy Creek (Chase) area. Local, thin coal beds at base of unit (Godwin, 1968, *Verde*, 1969, p. 8).
- P** Paonia Formation (Eocene and Paleocene)—Includes (from higher to lower) the Ohio Creek Member (Kmv), and Rollins Sandstone Member (Kmr). Consists of sandstone, shale, mudstone, and coal. Commonly forms moderately steep slopes where underlain by mudstone and shale and chert or ledges where underlain by sandstone. Locally may include small, unmapped surficial deposits. Volcanic sandstone, and shale. Stratigraphic rank assignment is that of Johnson and May (1980). Sandstone is fine to coarse grained; locally conglomeratic in upper part; lenticular, and ranges from a few feet to about 200 ft (60 m) thick. Sandstone is light gray to light tan, mudstone and shale, light brown to light gray. Sandstone is fine to very fine grained; beds are lenticular and commonly range from a few feet to about 100 ft (30 m) thick. Thin, nonconformable coal beds are locally present. About 750-1000 ft (230-305 m) thick; commonly thickens westward.
- Kmv** Coal-bearing member—Interbedded sandstone, mudstone, and shale, and siltstone. Contains coal beds and coals as much as 30 ft (9 m) thick. Sandstone is fine to very fine grained, pale yellowish brown with calcareous cement; lenticular, beds commonly range from a few feet to about 40 ft (12 m) thick. Mudstone, shale, or siltstone commonly light to dark gray. Sandstone thin and become more lenticular westward. Includes the Poona Shale Member and the Poona Shale Member of Lee (1912), and Collins (1976) and the lower and upper coal members of V. H. Johnson (unpub. mapping, 1948). Ranges in thickness from about 250 ft (75 m) in the Cedarledge area to about 650 ft (195 m) in the Tenter Creek area (25-60 m thick).
- Kmr** Mancos Shale (Upper Cretaceous)—Shale and mudstone, light gray to medium gray, and local, thin, impure limestone beds. Locally contains small deposits of unsorted alluvium and collium. About 4000-4500 ft (1200-1375 m) thick.

SYMBOLS

- Fault
- - -** Dashed where approximately located, short dashed where inferred, dotted where concealed, queried where uncertain of location and extent.
- Downstream side, U, upstream side.
- Subsurface—Dashed on top of the Rollins Sandstone Member, D, downstream side, U, upstream side.
- Active landslide scar that exposes bedrock—Dashed where approximately located.
- Limestone—Visible on aerial photographs.
- Coincides with or parallel to valleys or ridges.
- Crosscut valleys or ridges.
- Syncline
- Strike and dip of bedrock—Derived from structural contours, calculated from topographic maps where dip slopes occur, or measured in the field.
- Structure contour—Drawn on top of the Rollins Sandstone Member. Dashed where approximately located, short dashed where inferred, queried where questionable. Datum is mean sea level, contour interval 200 ft (60 m).
- Drill hole—Numbered drill holes are referred to in table 1 and are shown in the coal sections.

ACKNOWLEDGMENTS

Lithologic and coal logs were provided by Atlantic Richfield Co., Colorado Westernland, U.S. Steel Corp., and Mount Hope Carbon Inc. Their cooperation is gratefully acknowledged. The logs greatly aided analysis and correlation of coal beds. Small parts of the map in the Mount Cannon, Marshall Mountain, and West Beckwith Peak areas are modified from Gaskill and others (1977). Coal stratigraphic information was obtained from Lee (1912), G. H. Horn and K. V. Cammack (unpub. mapping, 1948), G. H. Horn and J. Allport (unpub. mapping, 1948), G. H. Horn and A. Richart (unpub. mapping, 1948), and V. H. Johnson (unpub. mapping, 1948).

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INDEX SHOWING SOURCES OF GEOLOGIC DATA

GEOLOGIC SOURCES

- 1 Modified from Godwin (1968)
- 2 Modified from Gaskill and Godwin (1966)
- 3 Field work by C. R. Dunrud (1978-1980)

