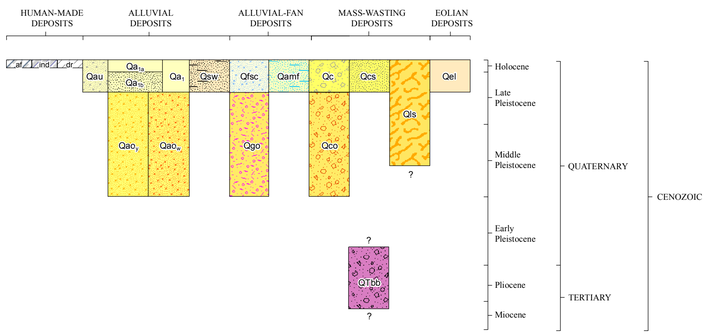
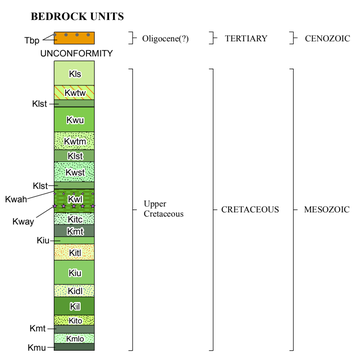
COLORADO GEOLOGICAL SURVEY
COLORADO SCHOOL OF MINES
GOLDEN, COLORADO

CORRELATION OF MAP UNITS

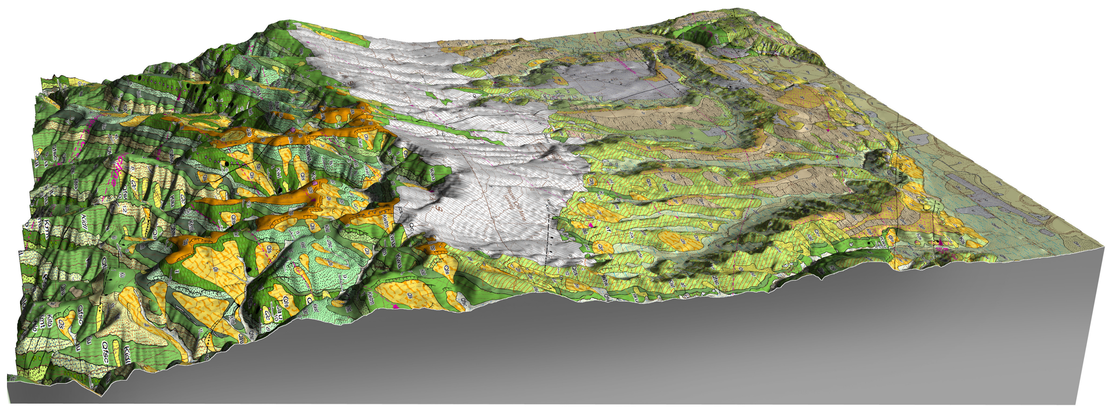
SURFICIAL DEPOSITS



BEDROCK UNITS



3-D OBLIQUE VIEW



Vertical Scale Exaggeration 2:1

STRUCTURAL GEOLOGY

The quadrangle is located on the southwest flank of the northwest-trending Sand Wash Basin. Generally, strata in this region strike southeast to northwest, and dip gently to the northeast. This produces an overall pattern with oldest formations exposed in the southwestern corner of the quadrangle and youngest to the northeast. However, several notable features disrupt this regional pattern in the Castor Gulch quadrangle. A complex northwest- to west-trending anticline crosses the northern part of the quadrangle, creating the Big Bottom Syncline. The Buck Peak Anticline is the eastern segment of the anticline and enters the northeast corner of the quadrangle where it is truncated by the Great Wall Fault. The later feature is a northwest-trending normal fault, down to the northeast, with evidence of Neogene movement in the adjacent Breeze Mountain quadrangle (Barkmann and others, 2015). The complex anticline continues to the west, on the south side of the "Great Wall" Fault, as the Craig Dome. A series of northeast-trending faults cross-cuts the Craig Dome as it follows a serpentine axis to the west. Subsurface elevation data for the top of the Twenty Mile Sandstone Member of the Williams Fork Formation indicate a reverse fault, northwest side up, separates the Craig Dome from the Big Bottom Syncline. This fault may not continue east beyond the series of northeast-trending faults.

The general northwest-trending structural fabric is further segmented by a series of low-relief, northeast-plunging monoclines that exhibit northwest-side-down displacements. These subtle features effectively create a stair-step overprint, dropping the otherwise northeast-dipping flank of the basin to the northwest. Beaver Creek Anticline is another northwest-trending fold entering the quadrangle from the south. It is paired with the Badger Creek Syncline on its southwest flank. Both features appear to die out as they intersect one of the northeast-trending monoclines.

Two other normal faults are also evident in the quadrangle. Both are northwest-trending normal faults, northeast side down, seen in the southeast corner of the quadrangle.

As with the greater Sand Wash Basin, the Buck Peak Anticline, Craig Dome, and Beaver Creek Anticline appear to be Laramide structures. Miocene Browns Park Formation sediments are nearly flat-lying and unconformably overlie inclined, older strata. Nearly flat-lying Browns Park Formation also steps down in elevation from east to west across several of the northeast-trending monoclines, suggesting possible Neogene movement on these other structures.

ACKNOWLEDGEMENTS

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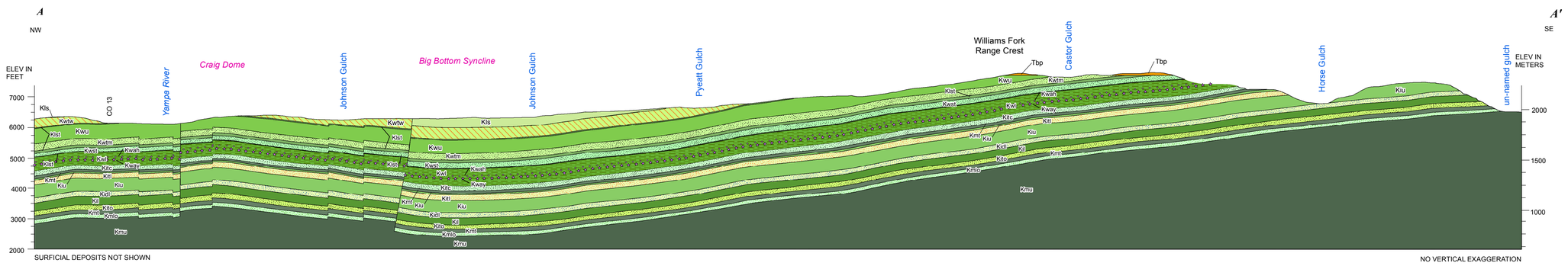
CROSS SECTION A-A'



GEOLOGIC MAP OF CASTOR GULCH QUADRANGLE, MOFFAT COUNTY, COLORADO
CORRELATION OF MAP UNITS, 3-D MAP, AND CROSS SECTION

By Peter E. Barkmann, William Curtiss, Christopher J. Carroll, Daniel R. Hosler, Nathan T. Rogers, Zachary D. Logan, and Michael J. Zawaski

2015

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