

Montana Bureau of Mines and Geology
Open File No. 450

Geologic Map of the
Belt 30' x 60' Quadrangle,
Central Montana

Susan M.Vuke, Richard B.Berg
Roger B.Colton, and Hugh E.O'Brien

2002

To view a full scale version of this map, [click here](#).

For the text files with the map information, [click here](#).

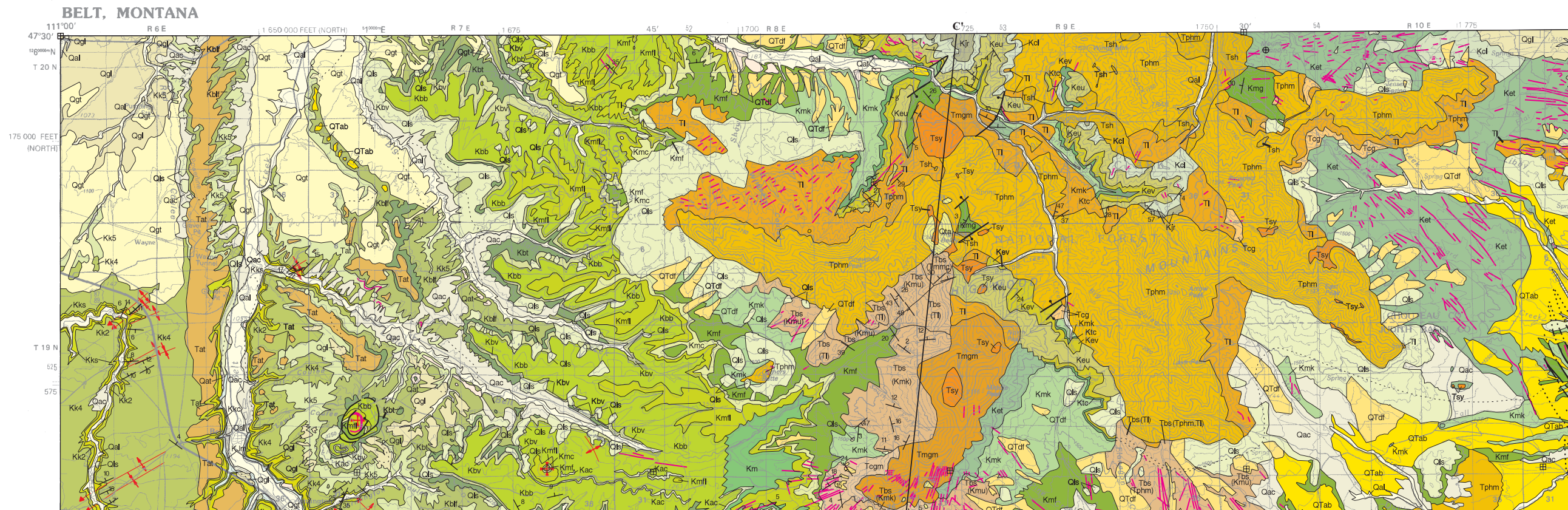
[Digital data link](#)

Note— This map was originally published at a scale of 1;100,000 but the page sizes have been modified to fit average printer capabilities (8½ x 14; legal size paper). There is a an eighth inch overlap on these pages. A full sized colored print of this map can be ordered from the **MBMG Publication Sales Office, 1300 West Park Street, Butte, MT, 59701-8997.**

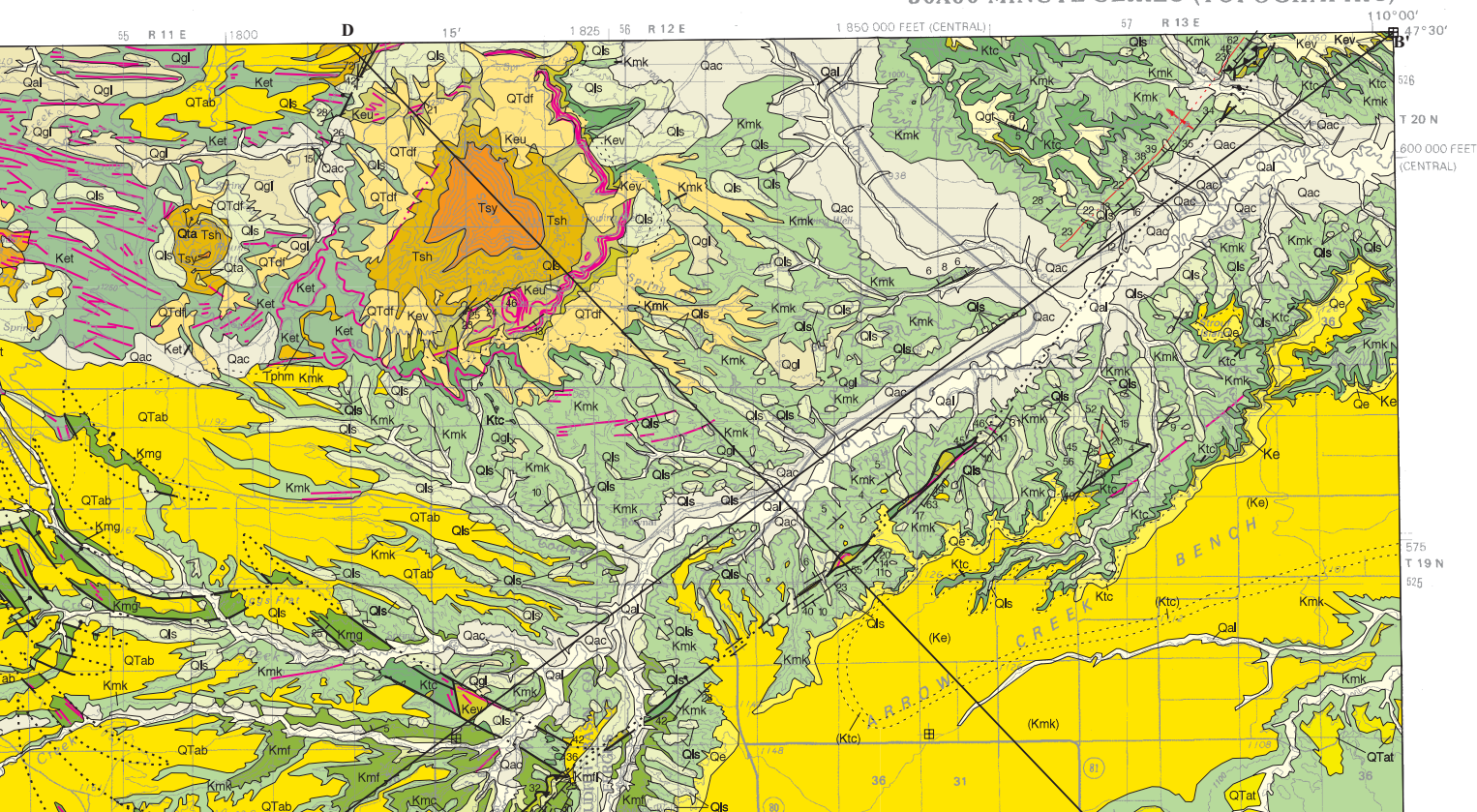
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Open File MBMG 450, Plate 1 of 2
Geologic Map, Belt 30'x60' Quadrangle, 2002 (Rev 2007)

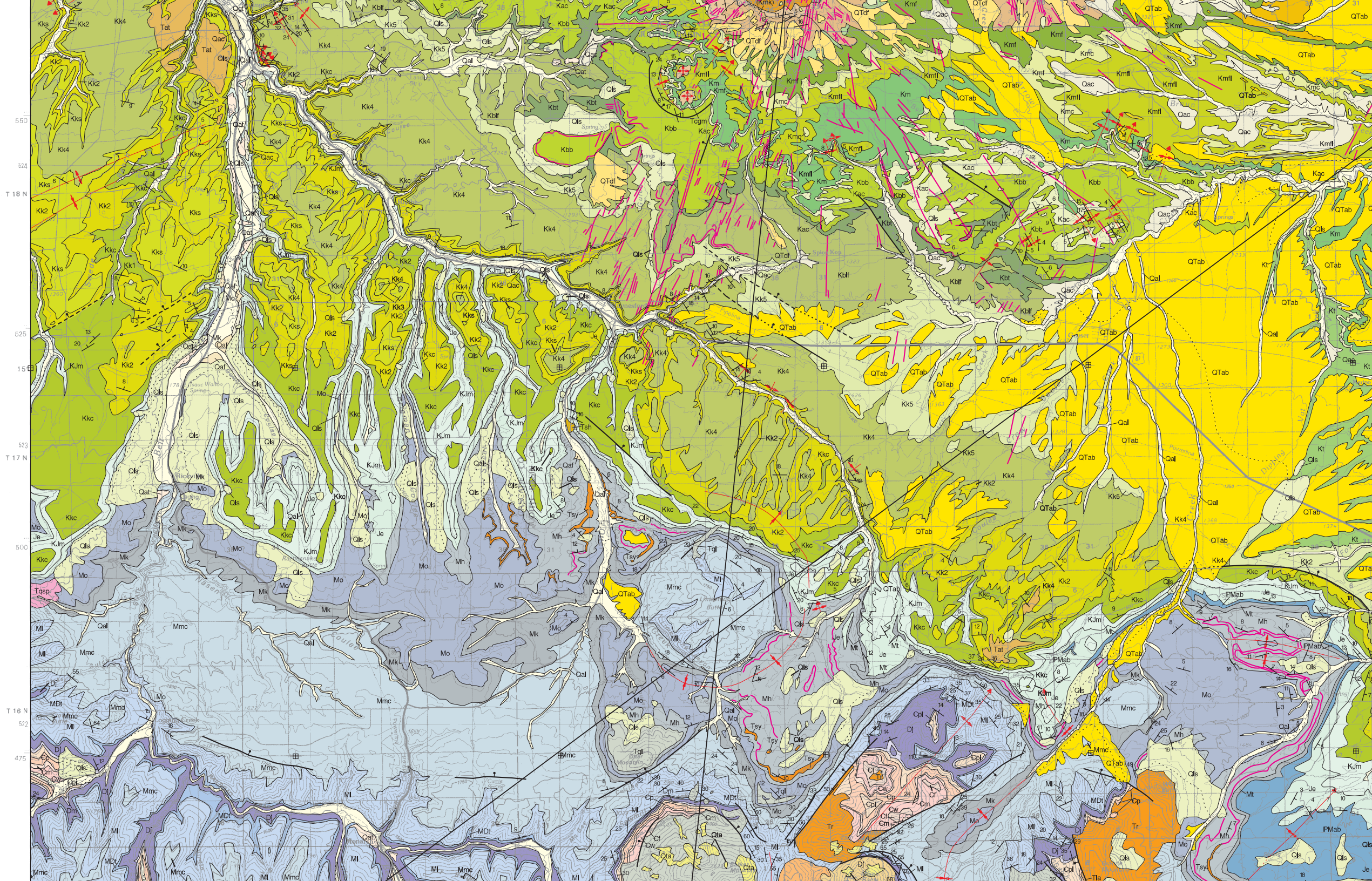


30X60 MINUTE SERIES (TOPOGRAPHIC)



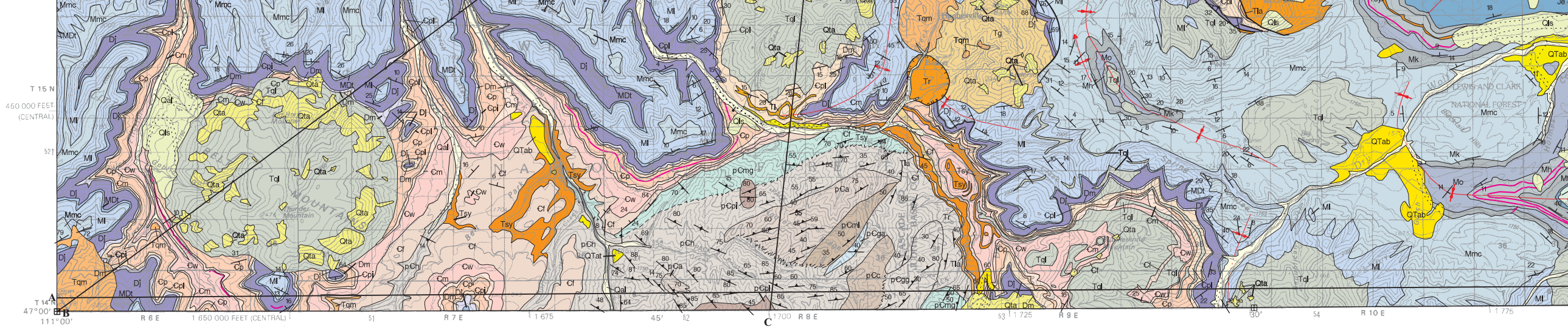
MAP UNITS

Qal	Alluvium of modern channels and flood plains
Qaf	Alluvial fan deposit
Qac	Alluvium-colluvium
Qe	Eolian deposit
Qat	Alluvium of alluvial terrace deposit
Qta	Talus deposit
Qls	Landslide deposit
Qgt	Glacial till
Qgl	Glacial lake deposit
QTab	Alluvium of braid plains
QTat	Alluvium of alluvial terrace deposit
QTdf	Debris flow deposit
Tat	Alluvium of alluvial terrace deposit
Tbs	Block-slide deposits
Tla	Lamprophyre
Tsh	Shonkinite





- Ish Snonkhitte
- Tsy Syenite
- Tqm Quartz monzonite
- Tqsp Quartz syenite porphyry
- Tql Quartz latite
- Tphm Phonolite, mafic
- Tl Latite and porphyritic latite
- Tr Rhyolite or rhyolitic sediment
- Tg Granite
- Tcg Conglomerate
- Tmngm Montana Group rocks, metamorphosed quartzite, siltite, hornfels
- Tcgm Colorado Group rocks, metamorphosed hornfels, siltite, quartzite
- Kmg Montana Group, undivided
- Kjr Judith River Formation
- Kdl Claggett Shale
- Ket Eagle and Telegraph Creek Formations, undivided
- Keu Eagle Formation, upper
- Kev Virgelle Member of Eagle Formation
- Ktc Telegraph Creek Formation
- Kmk Kevin Member of Marias River Formation
- Kmf Ferdig Member of Marias River Formation
- Kmc Cone Member of Marias River Formation
- Kmfl Floweree Member of Marias River Formation
- Km Mowry Shale
- Kac Arrow Creek Bed of Mowry Shale and/or Blackleaf Formation
- Kt Thermopolis Formation
- Kbb Bootlegger Member of Blackleaf Formation
- Kbv Vaughn Member of Blackleaf Formation
- Kbt Taft Hill Member of Blackleaf Formation
- Kblf Flood Member of Blackleaf Formation
- Kk5 Kootenai Formation, member 5, informal
- Kk4 Kootenai Formation, member 4, informal
- Kks Sunburst Sandstone Member of Kootenai Formation
- Kk2 Kootenai Formation, member 2, informal
- Kkc Cutbank Sandstone Member of Kootenai Formation
- Kjm Morrison Formation
- Je Ellis Group, undivided
- PMab Alaska Bench Formation
- Mt Tyler Formation
- Mh Heath Formation



Base from U.S. Geological Survey
 Belt 30' x 60' topographic quadrangle
 Map date: 1984
 Projection: UTM zone 12; 1927 NAD



SCALE 1:100 000
 1 CENTIMETER ON THE MAP REPRESENTS 1 KILOMETER ON THE GROUND
 CONTOUR INTERVAL 50 METERS

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 Open File 450

Geologic Map of the Belt 30' x 60' Quadrangle, Central Montana

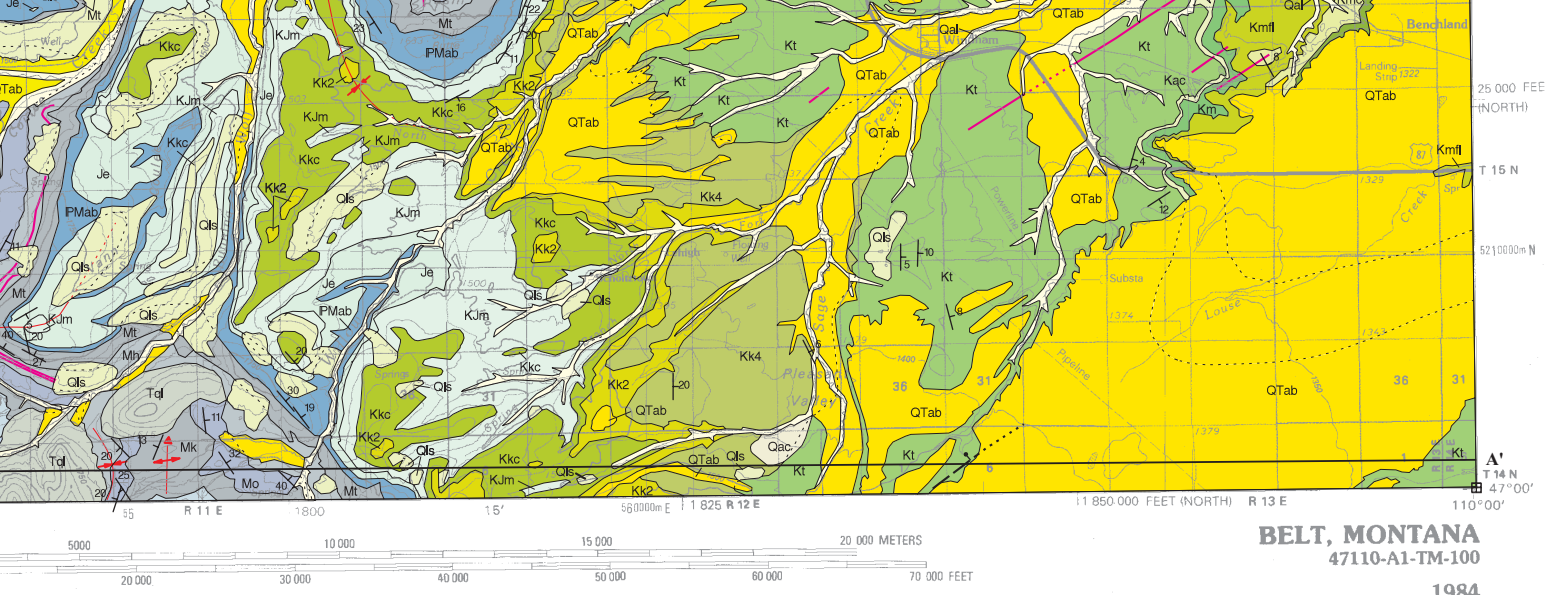
Susan M. Vuke, Richard B. Berg,
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2002 (Revised 2007)

Revision	Date
map - S M Vuke	8/07

Partial support has been provided by the STATEMAP component Mapping Program of the U.S. Geological Survey under Contract
 GIS production: Ken Sandau and Paul Thale, MBMG. Map lay





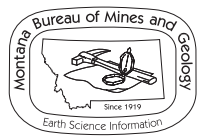
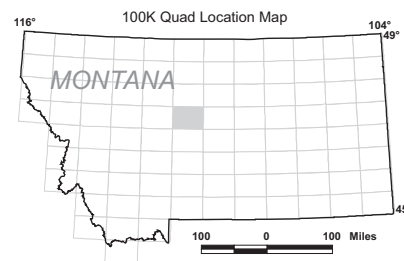
BELT, MONTANA
47110-A1-TM-100
1984

- Mh Heath Formation
- Mo Otter Formation
- Mk Kibbey Formation
- Mmc Mission Canyon Limestone
- MI Lodgepole Limestone
- MDt Three Forks Formation
- DJ Jefferson Formation
- Dm Maywood Formation
- Cpl Pilgrim Limestone
- Cp Park Shale
- Cm Meagher Limestone
- Cw Wolsey Shale
- Cf Flathead Formation
- pCpl Pinto Diorite
- pCc Amphibolite and pegmatite
- pCmg Metagabbro
- pCa Augen gneiss
- pCgg Granite gneiss
- pCga Garnet gneiss
- pCh Hornblende biolite gneiss
- pCmi Microcline gneiss

Cross-sections on Plate 2

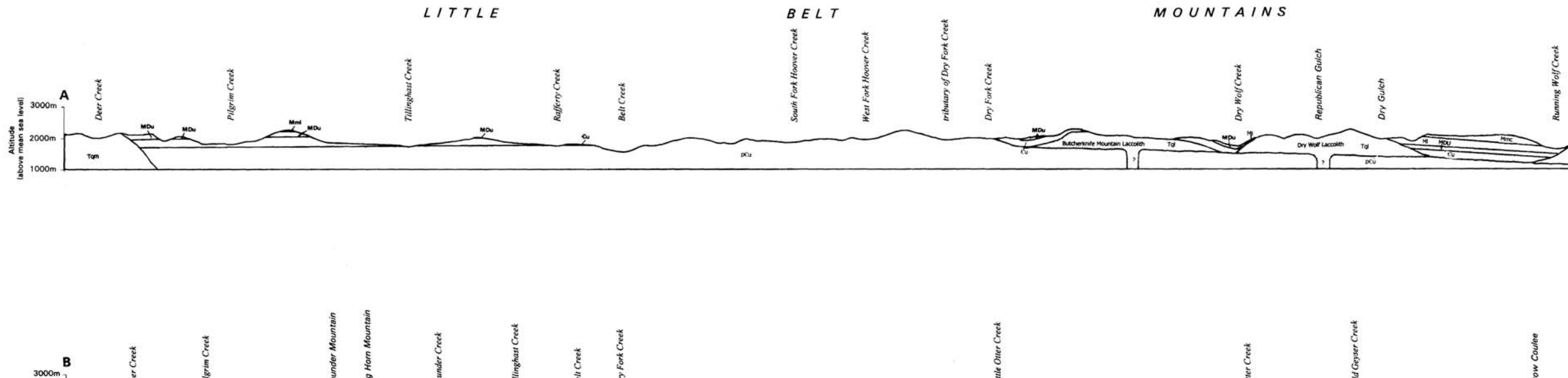
Quad index

GREAT FALLS NORTH	FORT BENTON	WINIFRED
GREAT FALLS SOUTH	BELT	LEWISTOWN
CANYON FERRY DAM	WHITE SULPHUR SPRINGS	BIG SNOWY MOUNTAINS

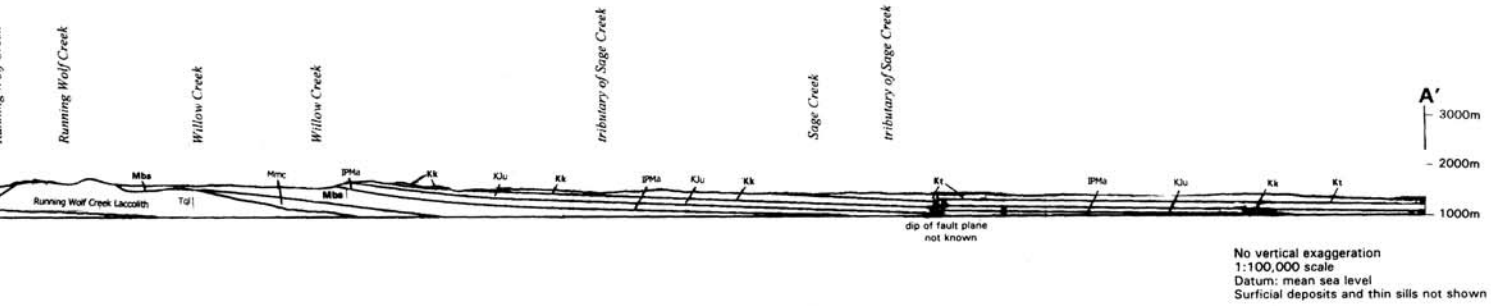


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Open File MBMG 450, Plate 2 of 2
Geologic Map, Belt 30'x60' Quadrangle



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 A Department of Montana Tech of The University of Montana



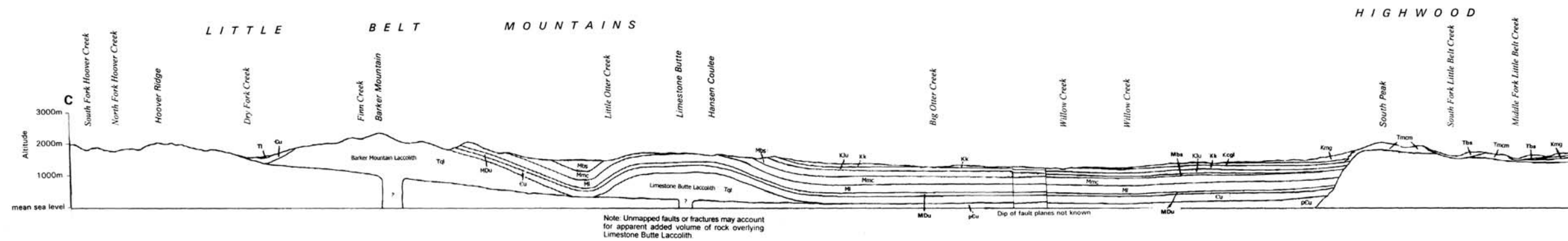
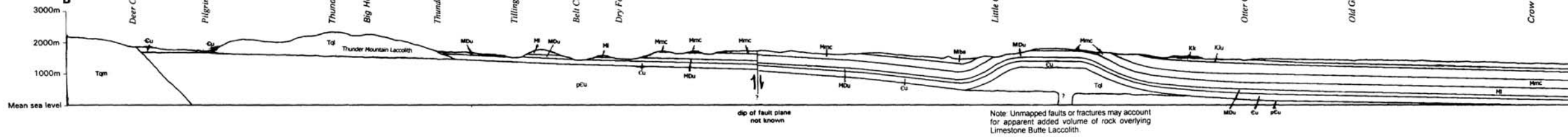
EXPLANATION FOR CROSS SECTIONS

- Tbs Block slide deposit
- Tsy Syenite
- Tsh Shonkinite
- Tphm Mafic phonolite
- Tqm Quartz monzonite
- Tql Quartz latite
- Tmcm Montana and Colorado Gp. rocks, metamorphosed to quartzite, siltite, & hornfels
- Ket Eagle and Telegraph Creek Fms., undivided
- Kmg Montana Group, undivided
- Kmr Marias River Shale
- Kcgl Lower Colorado Gp., undivided (Blackleaf, Thermopolis, Mowry Fms.)
- Kk Kootenai Fm.
- KJu Morrison Fm. and Ellis Group, undivided
- IPMa Amsden Group, undivided
- Mbs Big Snowy Group, undivided
- Mmc Mission Canyon Limestone
- MI Lodgepole Limestone
- Mdu Three Forks, Jefferson, Maywood Fms., undivided
- Gu Pilgrim, Park, Meagher, Wolsey, Flathead Fms., undivided
- pEu Precambrian rocks, undivided

$\frac{1}{2}$ A/T Fault—Arrows indicate relative movement on normal and reverse faults; A and T indicate relative movement away from and toward the viewer on strike slip faults

Dike

B' 3000m



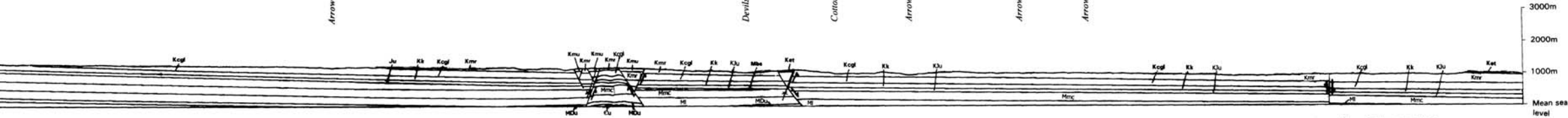
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Cross Sections of the Belt 30' x 60' Quadrangle Central Montana

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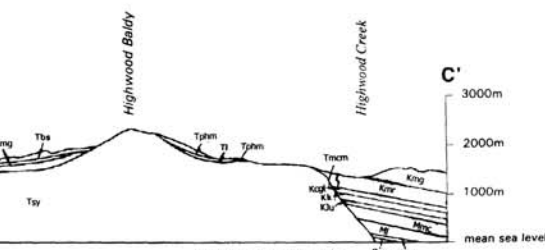
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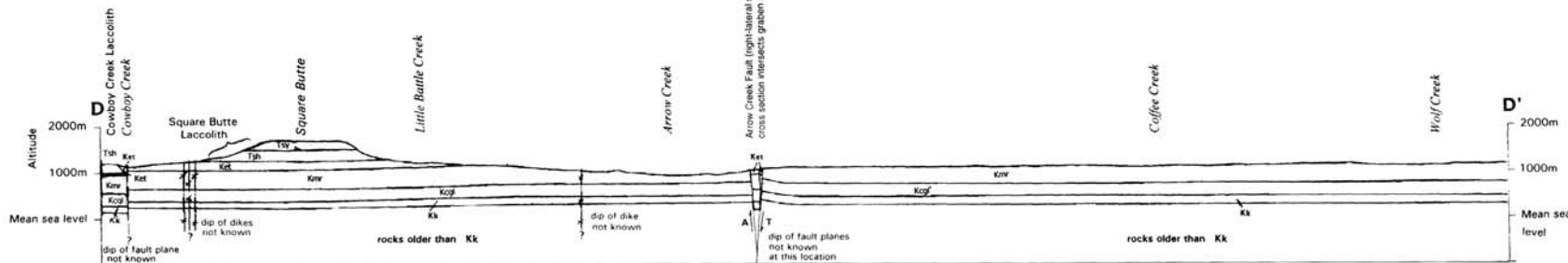


No vertical exaggeration
 1:100,000 scale
 Datum: mean sea level
 Surficial deposits and thin sills not shown

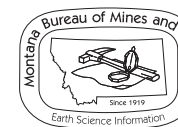
MOUNTAINS



No vertical exaggeration
 1:100,000 scale
 Datum: mean sea level
 Thin surficial deposits and sills not shown



No vertical exaggeration
 1:100,000 scale
 Datum: mean sea level
 Surficial deposits and thin sills not shown



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