

Montana Bureau of Mines and Geology
Open File No. 406

Geologic Map of the
Livingston 30' x 60' Quadrangle,
South-Central Montana

Richard B. Berg, David A. Lopez, and Jeffrey D. Lonn

2000

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

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

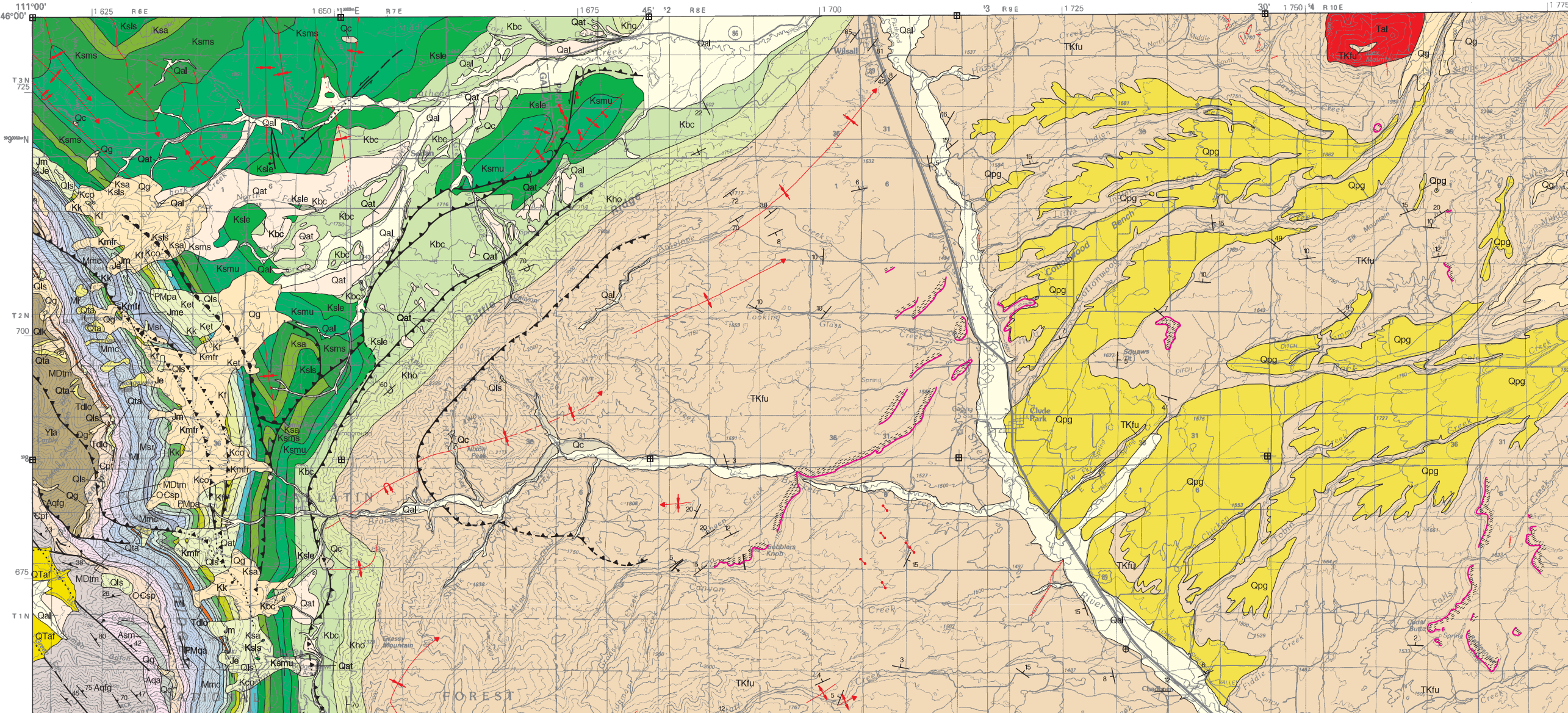
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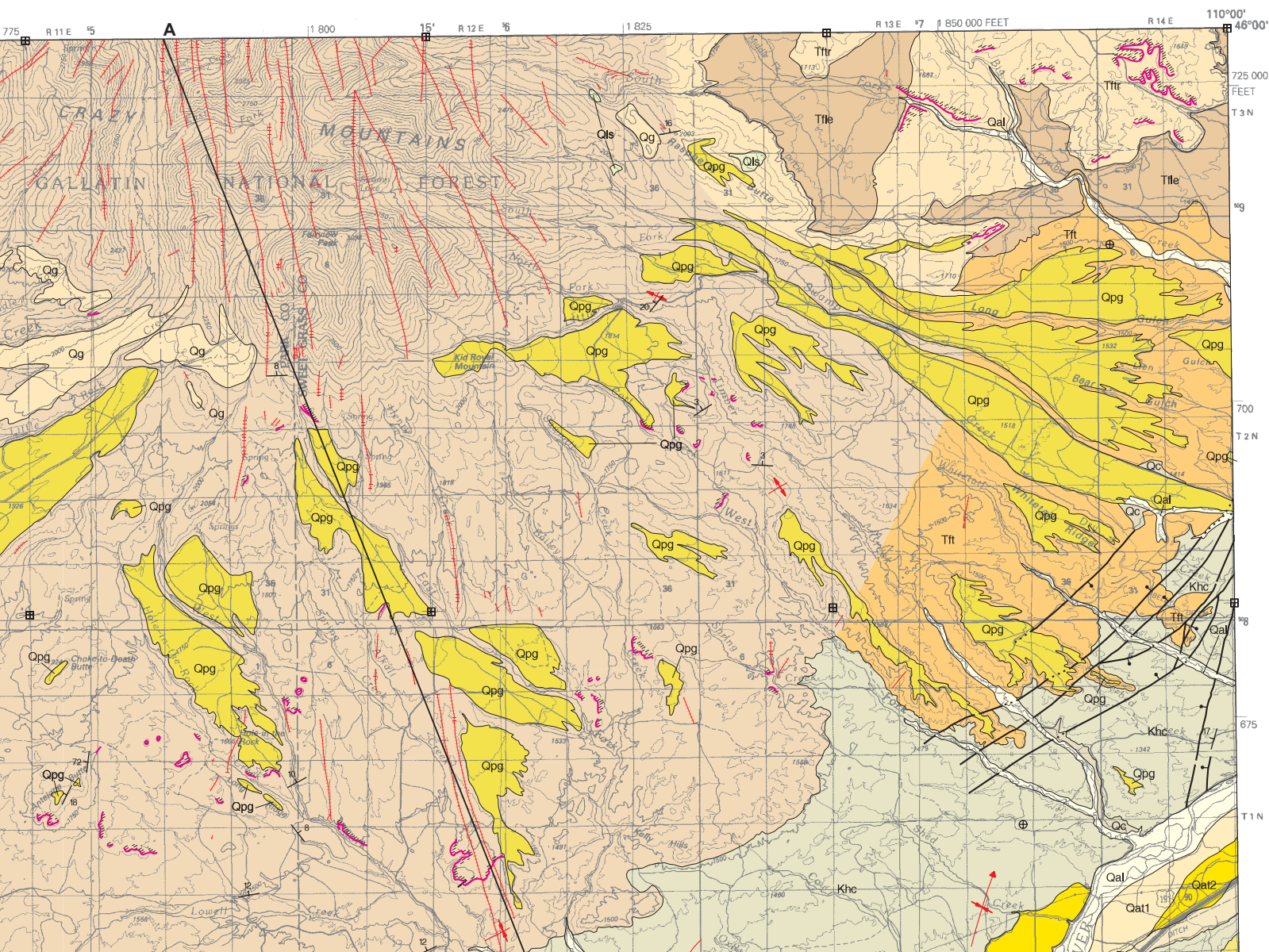
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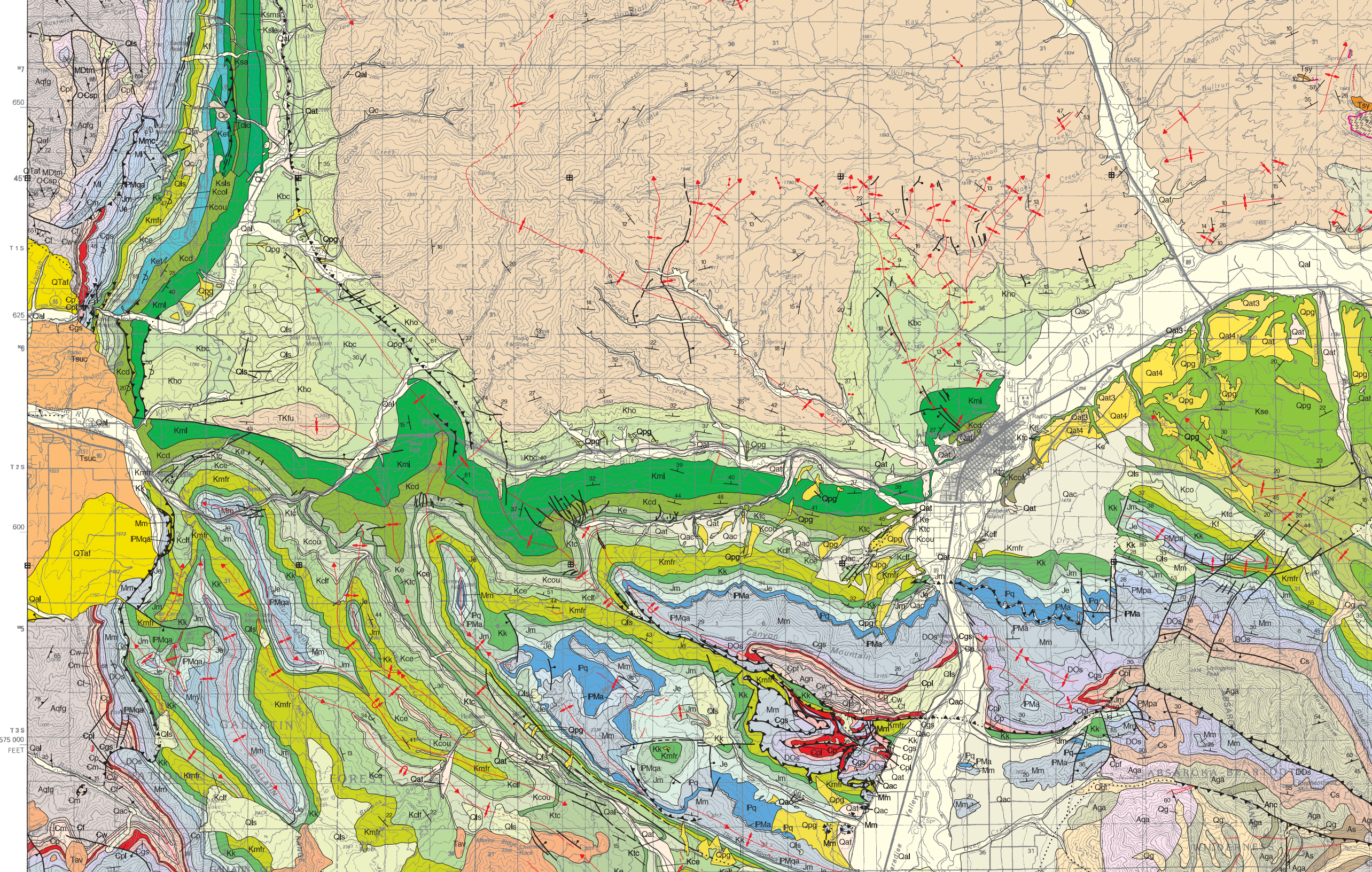
Open File MBMG 406, Plate 1 of 1
Geologic Map, Livingston 30'x60' Quadrangle





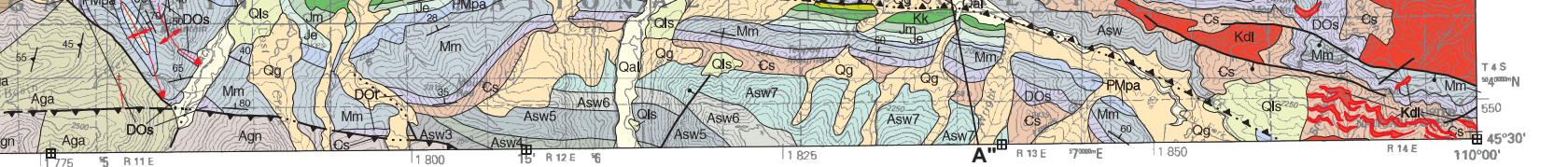
MAP UNITS

Qal	Alluvium of modern channels and flood plains
Qc	Colluvium
Qac	Alluvium and colluvium, undivided
Qaf	Alluvial fan deposit
Qlk	Lake deposit
Qta	Talus deposit
Qls	Landslide deposit
Qpg	Pediment gravel deposit
Qg	Glacial deposit, undivided
Qat	Alluvium of alluvial terrace
Qat1	Alluvium of youngest alluvial terrace
Qat2	Alluvium of second youngest alluvial terrace
Qat3	Alluvium of third youngest alluvial terrace
Qat4	Alluvium of fourth youngest alluvial terrace
Qat5	Alluvium of fifth youngest alluvial terrace, oldest
Qao	Alluvium, older, undivided
QTaf	Alluvial fan deposit
Ts	Sediment or sedimentary rocks, undivided
Tsuc	Sediment or sedimentary rock, upper Ter. coarser-grained
Tbh	Basalt, hypabyssal
Tal	Alkalic Intrusive
Tdlo	Diorite
Tsy	Syenite
Tav	Absaroka Volcanics
Ttr	Tongue River Member of Fort Union Formation
Tle	Lebo Member of Fort Union Formation
Tft	Tullock Member of Fort Union Formation

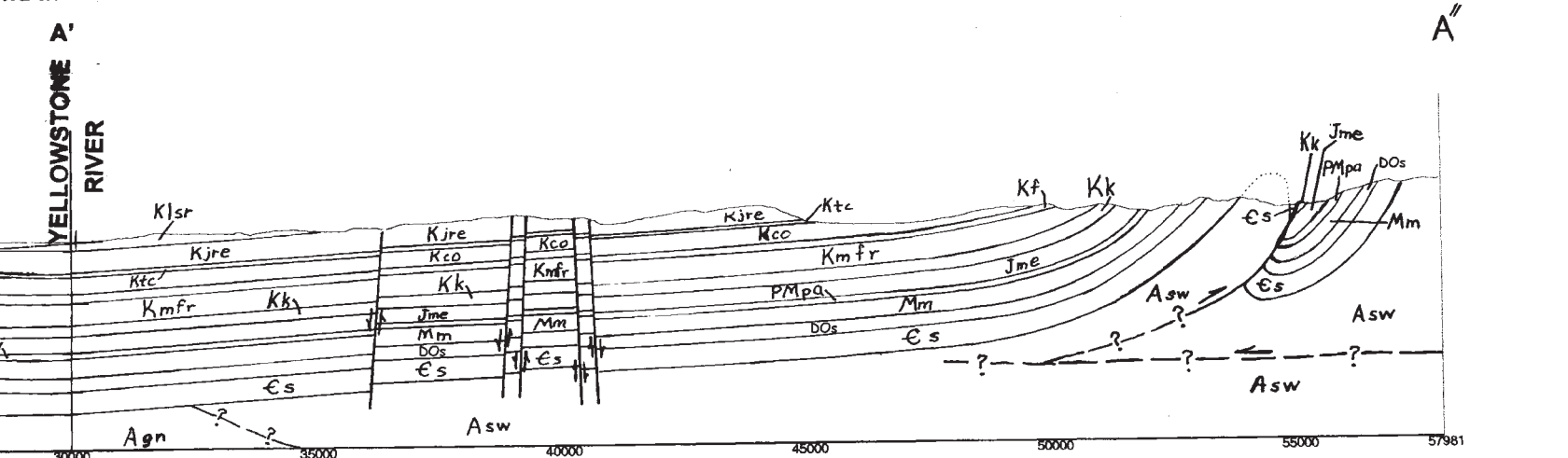




- Tilt
- Fort Union Formation, undivided
- Hell Creek Formation
- Diorite
- Sliderock Mtn. Fm., informal, of Livingston Group
- Hoppers Formation
- Billman Creek Formation
- Miner Creek Formation
- Cokedale Formation
- Sedan Formation
- Lenep Sandstone Member, of Sedan Formation
- Mudstone member, informal, of Sedan Formation
- Middle sandstone member, informal, of Sedan Formation
- Ash-flow tuff member, informal, of Sedan Formation
- Lower sandstone member, informal, of Sedan Formation
- Judith River through Eagle Formations, undivided
- Eagle Formation
- Eagle and Telegraph Creek Formations, undivided
- Telegraph Creek Formation
- Niobrara Formation
- Cody Shale
- Upper shale member, informal, of Cody Shale
- Eldridge Creek Member of Cody Shale
- Lower shale member, informal, of Cody Shale
- Lower shale member, informal, of Cody Shale and Frontier Formation, undivided
- Cody Shale and Frontier Formation, undivided
- Frontier Formation
- Mowry through Fall River Formations, undivided
- Kootenai Formation
- Morrison Formation and Ellis Group, undivided
- Morrison Formation
- Ellis Group, undivided
- Phosphoria, Quadrant, and Amsden Formations, undivided
- Quadrant and Amsden Formations, undivided
- Quadrant Formation
- Amsden Formation
- Snowcrest Range Group
- Madison Group, undivided
- Mission Canyon Limestone
- Lodpole Limestone



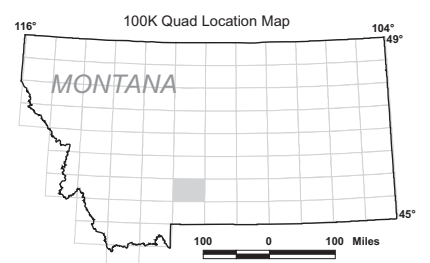
Legend in Section



Distance (meters)

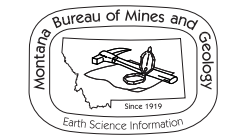
No vertical exaggeration
Surficial deposits not shown

- MI Lodgepole Limestone
- MDtm Three Forks Formation, Jefferson Dolomite and Maywood Formation
- DOs Sedimentary rocks, undivided
- OCsp Snowy Range Formation and Pilgrim Limestone
- Cs Sedimentary rocks, undivided
- Cgs Grove Creek and Snowy Range Formations, undivided
- Cpl Pilgrim Limestone
- Cpf Park through Flathead Formations, undivided
- Cp Park Shale
- Cm Meagher Limestone
- Cw Wolsey Shale
- Cf Flathead Formation
- Yla Lahood Formation
- Asw Stillwater Complex
- Asw7 Upper zones - Stillwater Complex
- Asw6 Middle anorthosite zone - Stillwater Complex
- Asw5 Lower and middle zones - Stillwater Complex
- Asw4 Lower anorthosite zone - Stillwater Complex
- Asw3 Norite and lower gabbro zones - Stillwater Complex
- Aga Amphibolite and gneiss
- Agn Gneissic rocks
- Aqa Quartzite and amphibolite
- Aqfg Quartzofeldspathic gneiss
- As Biotite schist
- Asm Sillimanite-garnet-biotite gneiss and marble
- Anc Nappe core complex



Quad index

TOWNSEND	RINGLING	HARLOWTON
BOZEMAN	LIVINGSTON	BIG TIMBER
ENNIS	GARDINER	RED LODGE



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