

Montana Bureau of Mines and Geology
Open File No. 431

Geologic Map of the
Birney 30' x 60' Quadrangle,
Southeast Montana

Compiled and mapped by Susan M. Vuke, Edward L. Heffern
Robert N. Bergantino and Roger B. Colton

2001

To view a full scale version (not printable) of this map, [click here](#).

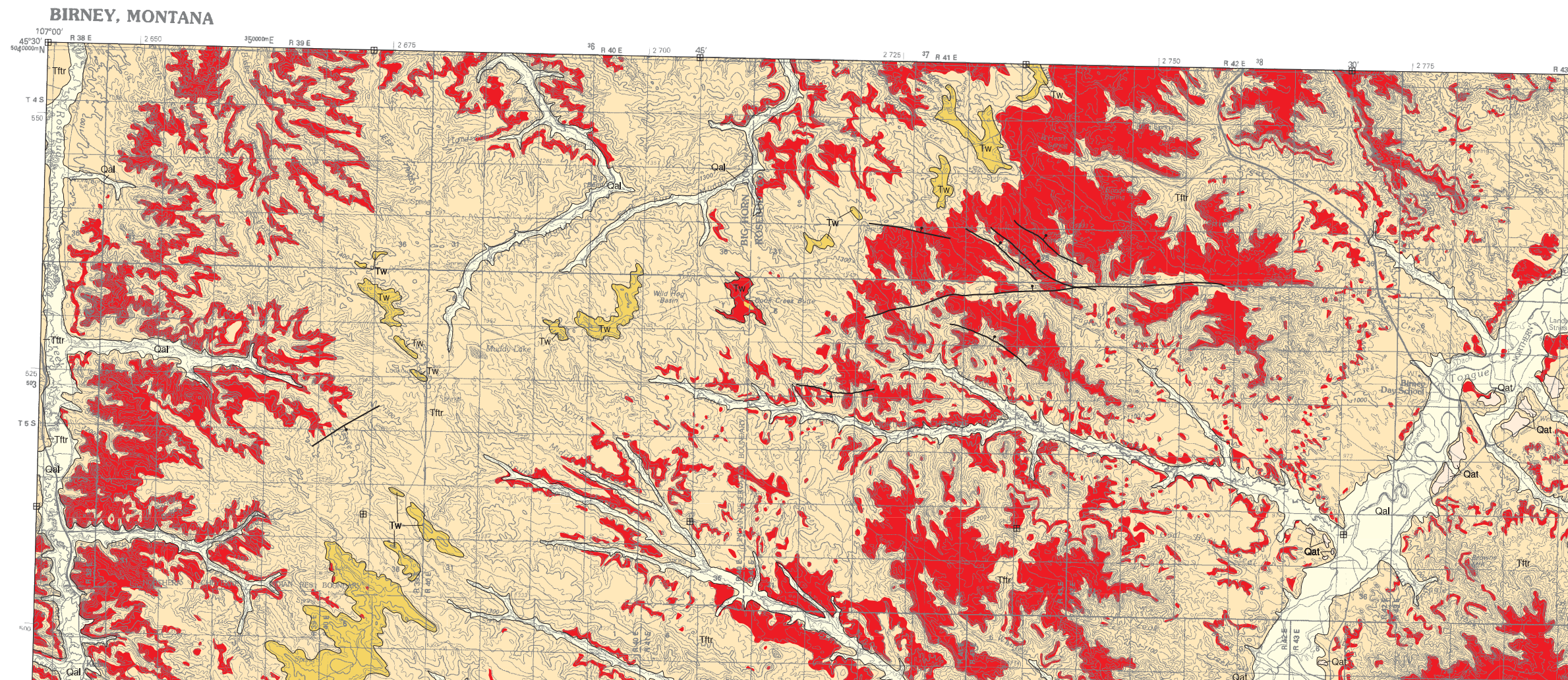
For the text files with the map information, [click here](#).

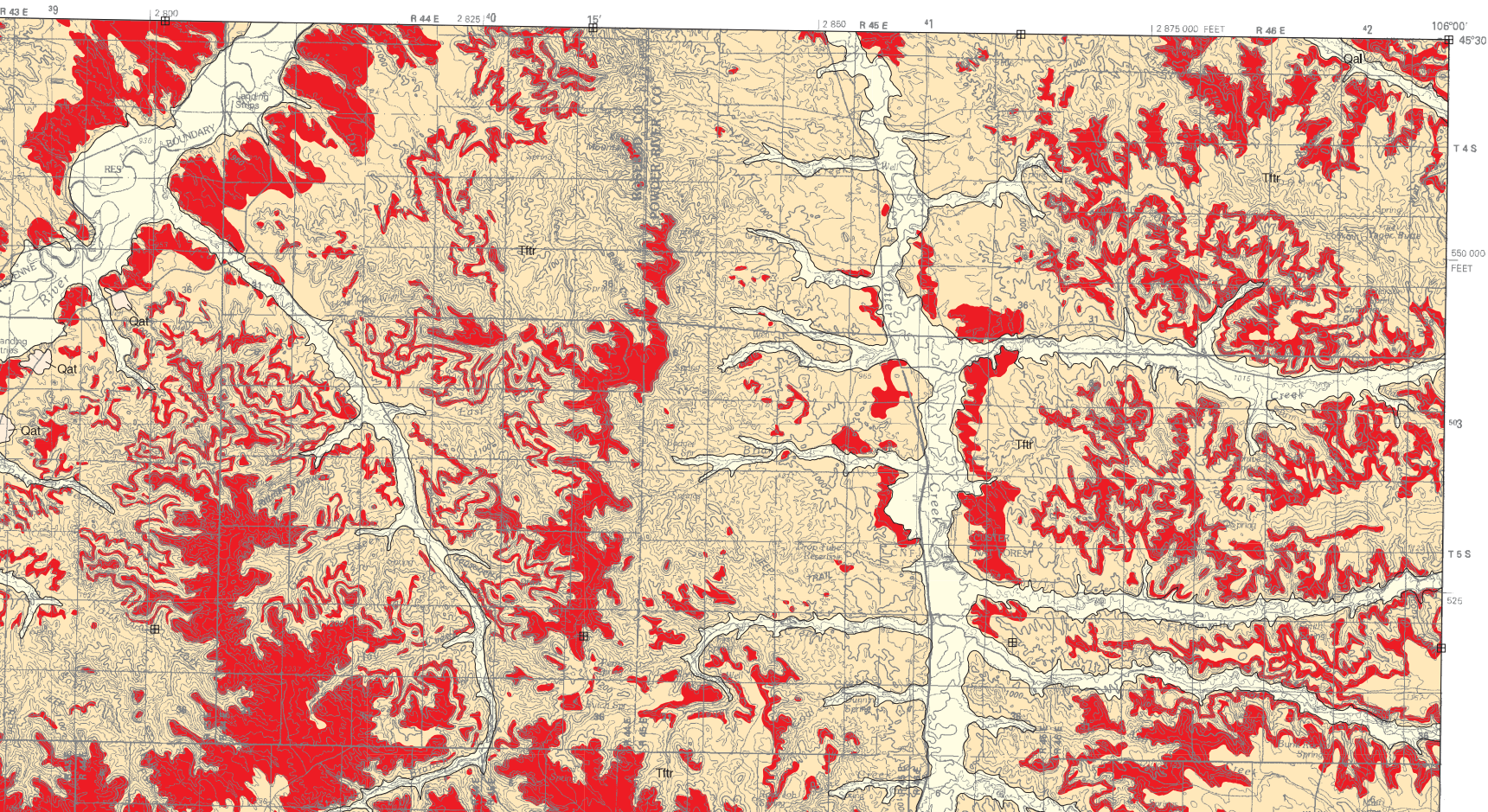
[Digital data link](#)

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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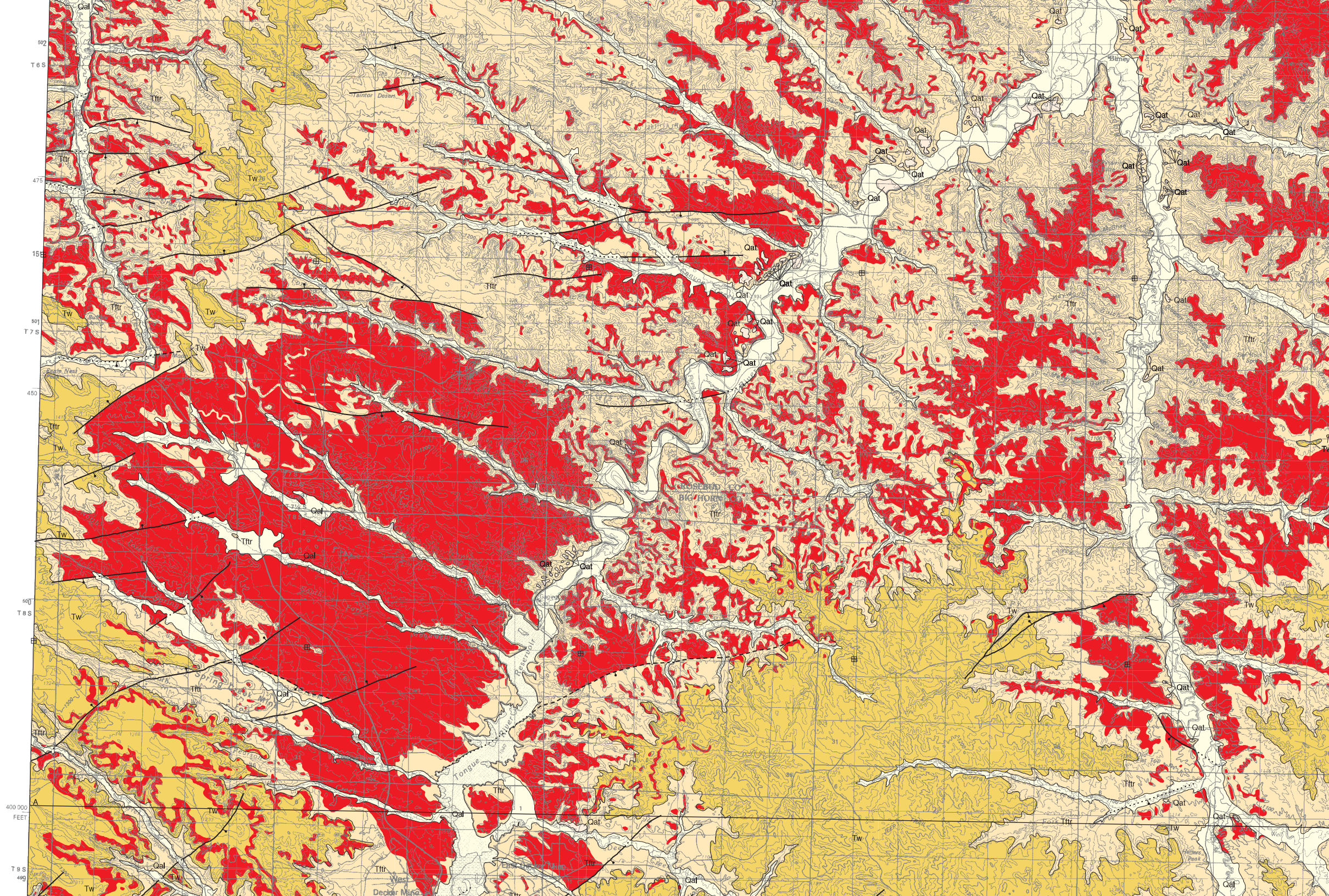
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MAP UNITS

Qal	Alluvium of modern channels and flood plains
Qat	Alluvium of alluvial terrace deposit
QTcl	Clinker
Tw	Wasatch Formation
Ttr	Tongue River Member of Fort Union Formation



T 8 S
475
15 E
601
T 7 S
450
600
T 6 S
600
400 000
FEET
T 9 S
499

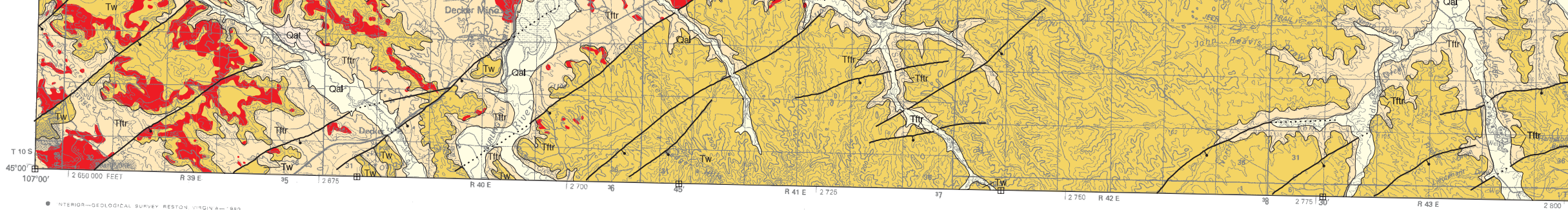
RESERVED
BIG HORN

Decker Mine

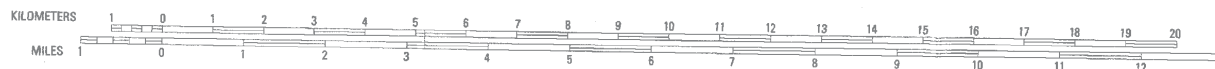
Tongue

Spring

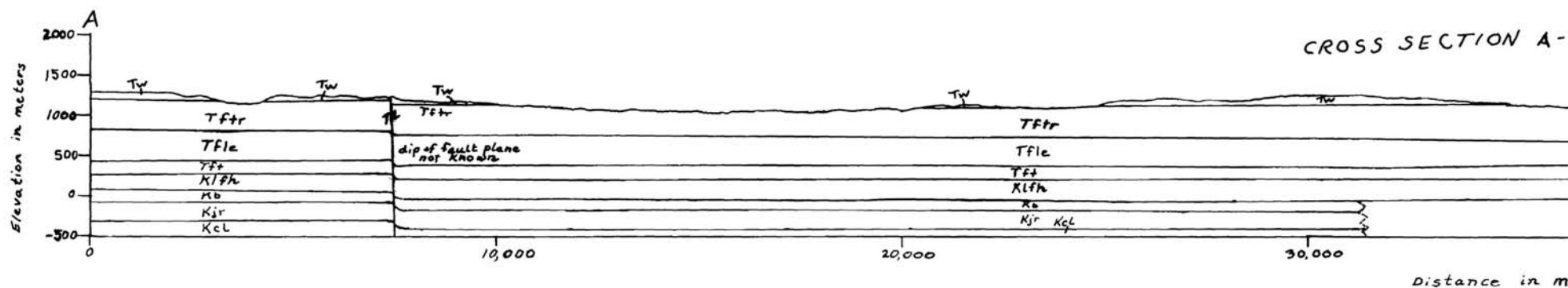
A



Base from U.S. Geological Survey
 Birney 30' x 60' topographic quadrangle
 Map date: 1980
 Projection: UTM zone 13; 1927 NAD



SCALE 1:100 000
 1 CENTIMETER ON THE MAP REPRESENTS 1 KILOMETER ON THE GROUND
 CONTOUR INTERVAL 20 METERS



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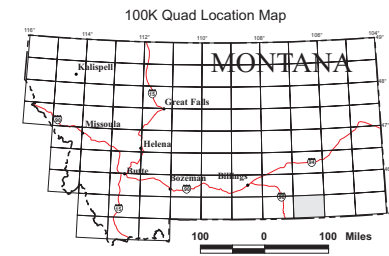
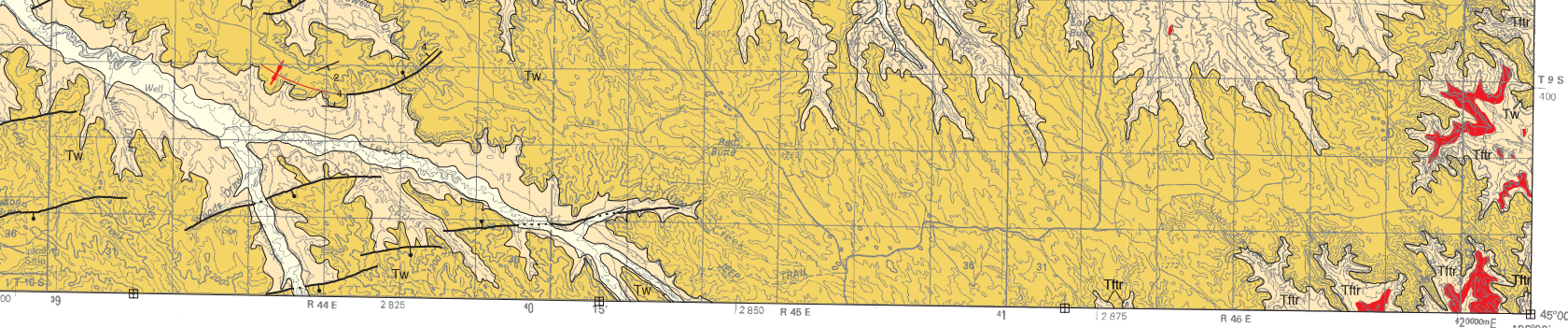
Geologic Map of the Birney 30' x 60' Quadrangle, Eastern Montana

Compiled and mapped by Susan M. Vuke, Edward L. Heffern,
 Robert N. Bergantino, and Roger B. Colton

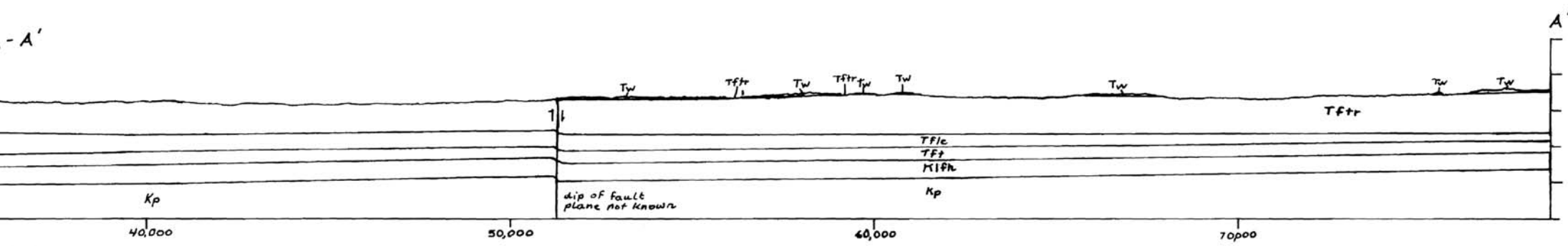
2001 (Revision 2007)

Revision	Date
map - S M Vuke	8/07

Partial support has been provided by the STATEMENT
 Mapping Program of the U.S. Geological Survey u
 GIS production: Ken Sandau and Paul Thale, MB



BIRNEY, MONTANA
 N4500-W10600/30x60
 1980

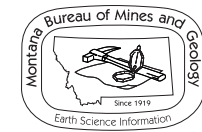


Vertical exaggeration - 2x
 Datum - mean sea level
 Surficial deposits and
 clinker not shown.

- Cross Section A-A' Explanation**
- Tw Wasatch Formation
 - Fort Union Formation
 - Tfr Tongue River Member
 - Tflc Lebo Member
 - Tft Tullock Member
 - Mftr Lance and Fox Hills Formations, undivided
 - Kb Bearpaw Shale
 - Kjr Judith River Formation
 - Kel Claggett Shale
 - Kp Pierre Shale

~ ~ ~ ~ ~
 Approximate location of nomenclature change from Bearpaw Shale, Judith River Formation, and Claggett Shale west of symbol to Pierre Shale east of symbol.

Sources:
 Denson and others (1993), Fox (1993), McLellan, (1991), Vuke and others (2000).



Maps may be obtained from
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 Survey under Contract Number 00-HQ-AG-0115.
 MBMG; Map layout: Susan Smith, MBMG.