

DESCRIPTIVE NOTES

The materials referred to as 'surfacial deposits' were laid down mainly by processes related to glaciation, but also include postglacial sediments deposited within large meltwater channels by fluvial and mass wasting processes. Thicknesses of surfacial deposits were obtained primarily from records of some 350 boreholes located on the map within the nearest quarter section. Borehole data on which the drift thickness map is based are given in feet, as are the elevational contours on the topographic base map. Therefore, the drift isopachs are also shown in feet to allow easy comparison with elevational information. Drift thicknesses recorded were rounded off to the nearest 10 foot interval to avoid implying a degree of accuracy not possible because of variations in local relief. Isopachs were plotted at 50 foot (15 m) intervals. Over parts of the area where borehole information is lacking isopachs were plotted by interpolating drift thickness from the nature of landforms of the surfacial deposits.

The surfacial deposits over most of this area are less than 15 m thick and generally occur within tracts of ground moraine. The thickest surfacial deposits are associated with ridged moraine along the flanks of the upland north of Pinto Butte where stacked slabs of bedrock and drift are more than 100 m (330 ft) thick over in situ bedrock. Drift from 30 to 80 m (100 to 260 ft) thick occurs within hummocky moraine belts southward of Frenchman Valley and within the former glacial lake basins and hummocky moraine belts in the northeast part; maximum thicknesses occur where these landscapes coincide with buried valleys. Surfaces in the southeast part of the area are entirely in bedrock or reworked bedrock and are within the 0" thickness isopach. Valley walls and bottoms within this area are underlain by unconsolidated sediments derived from local bedrock by fluvial and mass wasting processes; however, these fluvial and colluvial sediments are virtually impossible to separate on the basis of subsurface samples.

The drift reflects the lithologies of the underlying bedrock and the lithologies of the igneous, metamorphic, and carbonate rocks carried by glaciers from the Canadian Shield and bordering belt of Paleozoic carbonate rock to the northeast. The tills consist of roughly equal proportions of sand, silt, and clay with minor gravel. Fine sediments make up most of the stratified drift and gravel sized clasts have a comparatively limited distribution whether as components of till (about 5%) or as gravel beds.

Acknowledgments

The subsurface data used was from testhole and water well records made available by the Saskatchewan Water Resources Corporation with the help of U. Roger and B. Duncan. Testhole logs and cross-sections from Prairie Farm Rehabilitation Administration studies in Frenchman Valley were provided by A.F. Lukey in Regina. Michelle Perras and Ian MacQueen picked drift-bedrock contacts from drilling records and plotted the data on the map.

LEGEND

TERTIARY

- TW** WOOD MOUNTAIN FORMATION: Quartzite and chert gravel, interbedded with sand, silt, and clay; locally a conglomerate with carbonate cement; 0-30 m thick
  - TCH** CYPRESS HILLS FORMATION: Quartzite and chert gravel, interbedded with sand, silt, and clay; conglomerate zones with carbonate cement and bentonite beds occur locally; 0-75 m thick
  - TR** RAVENSCRAG FORMATION: Sand, silt, clay, and lignite; carbonaceous, concretionary, or calcareous zones occur locally; 0-200 m thick
- CRETACEOUS
- KU** UNDIFFERENTIATED FRENCHMAN, WHITEMUD, AND EASTEND FORMATIONS: Sand, silt, clay, and clay-shale; bentonitic, carbonaceous, concretionary, or calcareous zones occur locally; 0-50 m thick
  - KB** BEARPAW FORMATION: Silty clay and clay, noncalcareous, bentonitic and concretionary zones occur locally; includes several extensive sandy clay and sand beds; 0-400 m thick
  - KJ** JUDITH RIVER FORMATION: Sand, silt, and clay shale; commonly carbonaceous and noncalcareous; locally bentonitic; 45-125 m thick

- Geological boundary
- Drift thickness contour (feet)
- Thalweg of buried valley
- Borehole and drift thickness (feet)

Compiled by R.W. Klassen, I. MacQueen, and M. Perras, 1988-1990

Bedrock geology after Whitaker, S.H. (1967);  
Geology and groundwater resources of the Wood Mountain area (72G)  
Saskatchewan; Saskatchewan Research Council, Geology Division;  
Map no. 5, scale 1:250 000

Geological cartography by the Geological Survey of Canada

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

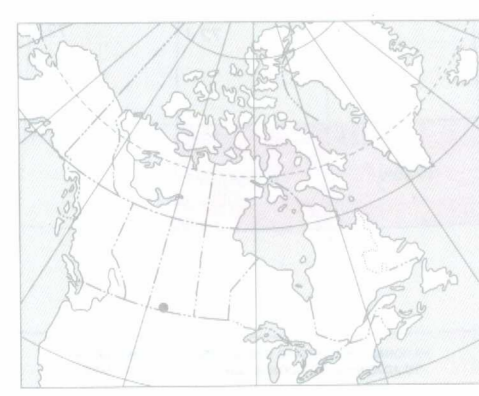
Base map at the same scale published by the Surveys and Mapping Branch in 1976

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Mean magnetic declination 1992, 14°00' E, decreasing 6.8" annually. Readings vary from 13°12' E in the SE corner to 14°51' E in the NW corner of the map

Elevations in feet above mean sea level

Copies of this map may be obtained from the Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, 3903-3903 Street, N.W., Calgary, Alberta T2L 2A7

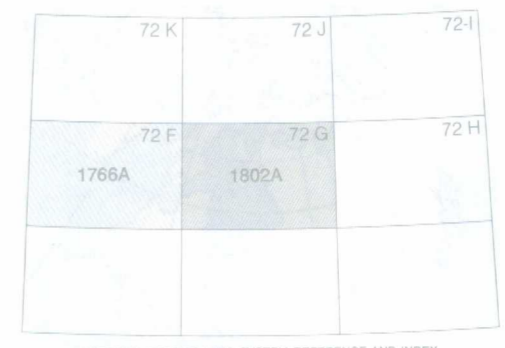


MAP 1802A  
DRIFT THICKNESS  
**WOOD MOUNTAIN**  
SASKATCHEWAN

Scale 1:250 000 - Echelle 1/250 000

Kilometres 5 10 15 20 Kilometres

Universal Transverse Mercator Projection / Projection transverse universelle de Mercator  
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