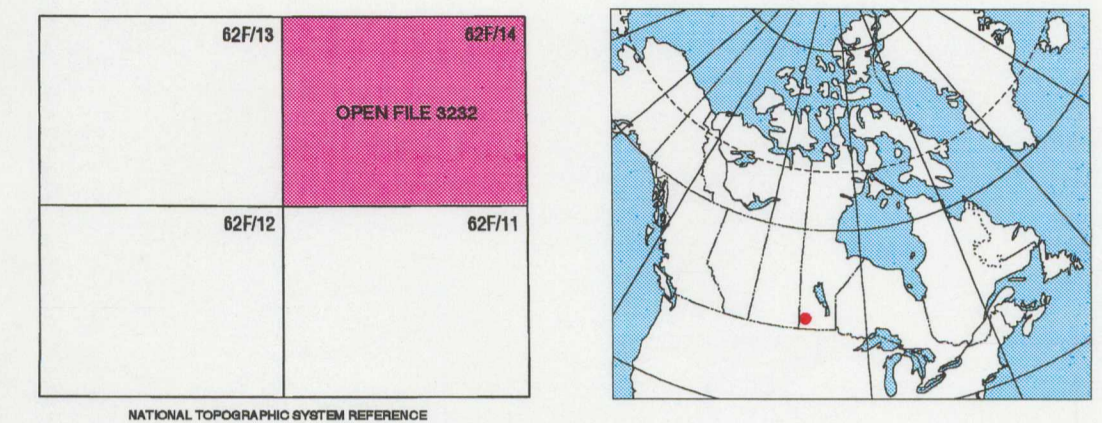
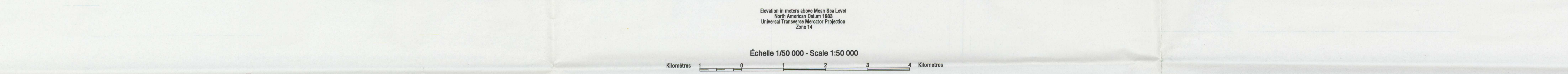


- SURFICIAL GEOLOGY ELKHORN, MANITOBA (62F/14)**
- SURFICIAL MATERIALS**
- Quaternary
- Ch** Slope Failure Deposits: Silty to clayey diamicton and shale slabs and blocks; occur as irregular hummocks, ridges and steps on slopes, and as ridges and hummocks within valleys; formed by slumping and slope failure; unit thickness <10 m.
 - Cx** Colluvial Complex: Silty to clayey diamicton; veneers, blankets, aprons, and fans of colluvial debris occurring on and at the base of steep slopes; complex of colluvial materials which can include areas of till, washed till and locally may contain small inclusions of alluvial plains and terraces; C1x - colluvial complex including a stream floodplain that is 50 - 100 m wide; unit thickness <5 m.
 - Ap** ALLUVIAL FLOODPLAIN DEPOSITS: silt, clay, and sand with minor gravel and organic muck and organic-rich silt and clay; poorly sorted and stratified; modern floodplains occurring as gently undulating plains containing swales and abandoned stream channels; locally swampy; unit thickness <5 m in most areas.
 - GLACIOFLUVIAL DEPOSITS:** sand and gravel in ridges and hummocks, underlying benches well above present stream level, and underlying broad flat to undulating plains; coarse clast composition variable and in many places dominated by shale; deposited as glaciofluvial materials in contact with melting ice, as glacial outwash plains and deltas, and as catastrophic flood deposits.
 - Gt** Glaciofluvial Terrace Sediments: sand, gravel, and bouldery gravel; well washed and sorted; occurs as benches 5-40 m above modern valley floors; remnants of glaciofluvial outwash plains; unit thickness <5 m.
 - Gi** Glaciofluvial Plain Sediments, Flat: sand, gravel, and bouldery gravel; well washed and sorted; nearly flat (level) to gently undulating with relief <2 m; coarse clast composition variable and generally high in shale; largely formed as deltaic deposits at the margin of glacial lakes; unit thickness <10 m.
 - Gp** Glaciofluvial Plain Sediments, Gently Undulating: sand, gravel, and bouldery gravel; well washed and sorted; gently undulating plain marked by low ridges and abandoned scour channels with relief 2-5 m; coarse clast composition variable and generally high in shale; deltaic deposits formed at the margin of glacial Lake Hind and other temporary lake; unit thickness <10 m.
 - MORAINAL DEPOSITS:** till (diamicton). In many areas overlain by a surface layer (~1 m) of massive, sparsely pebbly, clayey silt; in places also includes variable amounts of sorted glacial deposits, and minor veneers of postglacial alluvial and solon silt and sand, and organic-rich silt and clay; till generally is a sandy, clayey, silt diamicton having a minor content of pebbles and variable content of boulders; morainal deposits are the direct deposits of glacial ice; till layers of different ages commonly underlie the surface but stratigraphy and thickness can be assessed only by drilling, a discontinuous layer of large (<1.5 m diameter) faceted boulders lies at the base of the surface till layer in many places; thickness varies from as little as 1 m where a single till sheet overlies bedrock, to 100 m in buried valleys and in the southwestern and southern part of map area where multiple till units are present.
 - T-w** Till Plain, Eroded: till, gravel, boulders, sandy silt, sand, and muck; consists of till, in many places with an overlying discontinuous lag of gravel, sand, and boulders; includes muck and silty sediments in poorly drained valley floor locations; occurs as flat plains, on benches in valley bottoms, and on slopes at the margins of meltwater channels; patchy gravel and sand occurring as part of this unit is in places <2 m thick.
 - Tl** Till Plain, Flat: till, in many places overlain by massive clayey silt <1.5 m thick; nearly flat (level) to very gently undulating with relief <2 m in the form of low rises and shallow depressions; TH - flat till plain including scattered low ridges 100 to 1000 m in length, generally consisting of massive, pebbly, silty sand or sandy gravel of glacier disintegration origin.
 - Tp** Till Plain, Gently Undulating: till and minor sorted sediments; gently undulating areas of low rises and shallow depression (relief 2-5 m); Tp-r - gently undulating till plain including scattered low ridges 100 to 1000 m in length, generally consisting of massive, pebbly, silty sand or sandy gravel of glacier disintegration origin; Tp-r - gently undulating till plain including rim ridges (arcuate ridges in part outlining shallow depressions); Tp-mr - gently undulating till plain including low mounds and scattered low ridges, generally consisting of massive, pebbly, silty sand or sandy gravel.
 - Tr** Till Plain, Ridged: till with variable inclusions of sorted sediment; generally occurs as broad (50-175 m), moderate relief (2-10 m), ridges which are 500 m to 2 km long and spaced at intervals from 0.5 to 2 km; ridges developed by ice thrusting and various ablation related processes during melting of the glacier.
- FEATURES AND SYMBOLS**
- Geological boundary
 - defined
 - approximate
 - assumed
 - Abandoned channel
 - large
 - small
 - Esker
 - Moraine ridges (minor)
 - Ice flow direction from striations on boulder pavement
 - Gravel pit
 - Ground observation
 - Till analysis site
 - Borehole log site
 - locality
 - analyses available
- Geology by R.J. Fulton, 1993



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