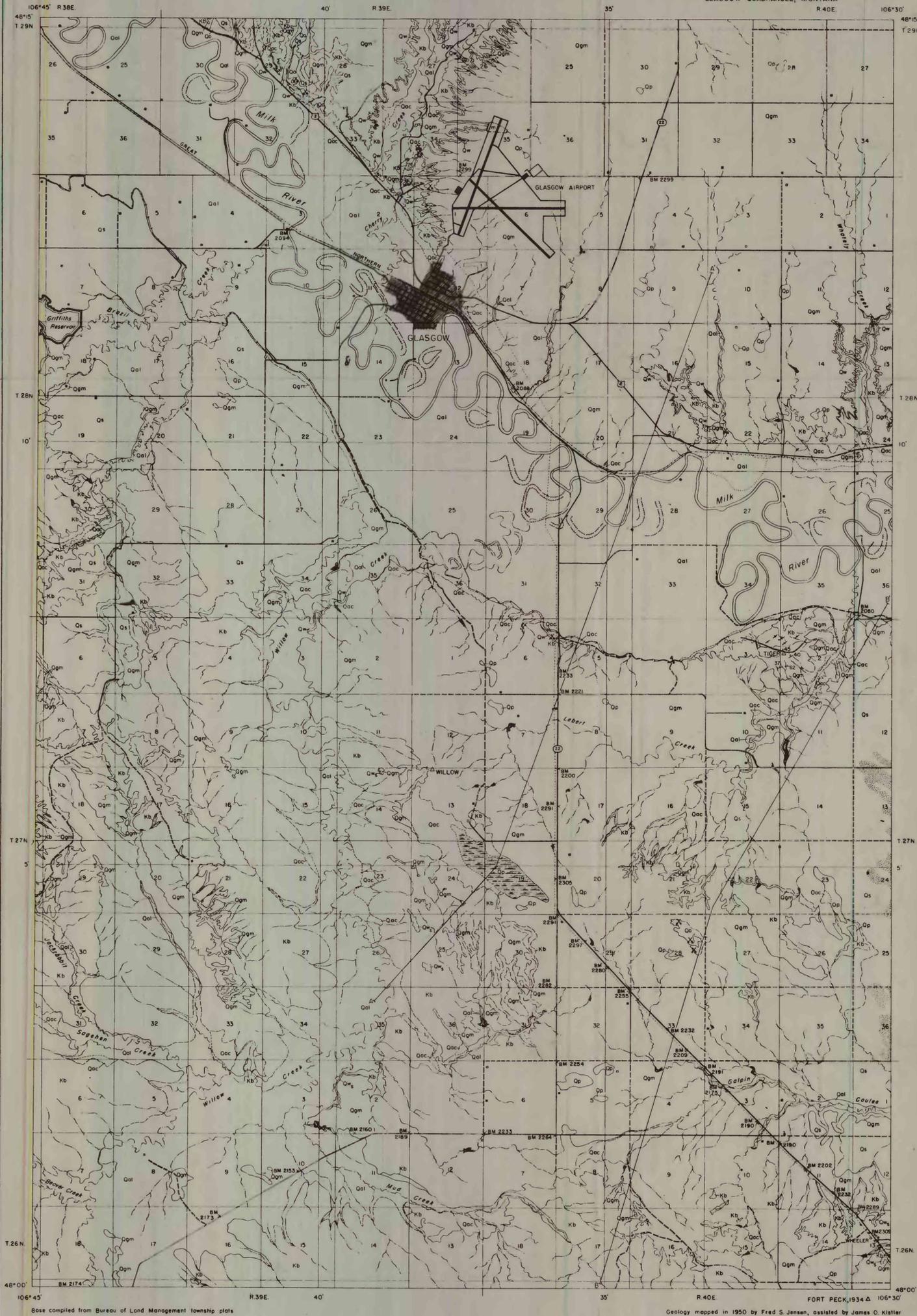


UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Prepared as part of the Department of the Interior's program
for the development of the Missouri River Basin

MISSOURI RIVER BASIN
GEOLOGIC MAPPING AND MINERAL RESOURCE INVESTIGATIONS
GLASGOW QUADRANGLE, MONTANA



EXPLANATION

- Qp** Interstitial sand deposits
Clay and loess amounts of silt, clay, and gravel, dark gray near surface grading to light brown at depth, 1 foot to probable maximum of 10 feet in thickness, in undrained depressions.
- Qm** Alluvial colluvial deposits
Silt, clay, sand, and gravel, locally containing thin lenses of sand and gravel; the coarse fractions more abundant up slope or locally absent; poorly sorted, grayish brown on valley sides and contiguous parts of valley bottoms.
- Qal** Alluvium
Silt, clay, sand, and gravel, in cross-bedded to massive layers of widely differing thickness; material commonly fine grained near surface, grading to light to dark brown and grayish brown, generally 10 to 100 feet thick in river valleys, thinner in creek valleys, not mapped where thinner than 10 feet. Most alluvial material on southeastern part of quadrangle consists of reworked loess; however, small deposits of loess are included in it to appear nearly flat, except for stream gullies and broader benches as much as 30 feet deep.
- Qs** Supereolian deposits
Clay and silt, clay, locally containing thin and irregular masses of silt and very fine sand, the silt and sand commonly laminated or cross-bedded on a small scale, locally intricately folded and faulted; dark brown to light tan, the silt and sand generally the lighter color; from 10 to more than 100 feet thick, the gently rolling lower parts of upland. This pattern indicates surface deposits of dark brown non-erosional sand of recent eolian origin, near and beyond topography.
- Qd** Dune deposits
Sand, gravel and thin sand lenses or, in places, mostly fine sand and silt; locally cross-bedded, glacial erratic stones, fragments of quartzite, granite, gneiss, limestone, and basalt, other stones mostly pebbles, and less commonly cobbles, of quartzite, granite, limestone, generally 5 to 10 feet thick, topographically distinct as flat-topped benches on upland or valley sides.
- Qgm** Gravelly moraine
Till, containing thin widely separated lenses of silt, sand, and gravel; the till is a compact unstratified mixture of clay and lesser amounts of silt, sand, and stones, many of the stones glacial erratics; granite, gneiss, basalt, limestone, dolomite, and other stones quartzite; a few locally derived concretions and sandstone fragments to the south or southeast; commonly 5 to 15 feet thick, in broad valleys, locally more than 100 feet thick, from abundant narrow topographic irregularities on gently sloping upland terrain, more resistant to erosion than local bedrock.
- Qc & Qcs** Weak gravels
Sand, quartzite gravel and minor sand lenses, locally fine to medium sand from upper part, locally more than 100 feet thick, silt, and clay, granitic pebbles of probable western origin rare to absent; quartzite stones, some reddish brown color to maximum, generally 6 to 20 feet thick; Qc is a heterogeneous facies containing no quartzite stones, composed of dolomite, limestone, sandy silt to poorly sorted reddish brown fine gravel, derived from local detritus and perhaps tertiary basaltic formations to the south or southeast; topographically distinct on small bench on valley sides where composed dominantly of gravel; elsewhere topography blends with prevailing slope.
- Qb** Neogene shale
Well-consolidated clay shale, thick units of non-fossiliferous shale containing clay, limestone concretions alternate with thin units of fossiliferous shale containing limestone and other concretions; thin beds of limestone, some fossiliferous; near localities, about 1,500 feet thick of which only the lower 800 feet is present within quadrangle; limestone streaks made to stripes, finer than the non-limestone strata, shale upland gently to markedly rolling.
- Qn** Micaudite fill
Stream cut - comp.
- C** Contact
(dashed where approximately located)
- F** Fault, showing strike and dip
(dashed where approximately located)
- S** Strike and dip of beds
BM 2297
Black mark
(showing altitude)
- TR** Triangulation station
- NG** Sand and gravel pit
- IC** Irrigation canal
- IS** Intersecting stream
- IS&D** Intersecting stream and dam
- P** Power line
- G** Cemetery
- FB** Overgrown houses and farmsteads
- S** School
- O** Other buildings
- AO** Area of bare outcrop
- PH** Paved highway
- GH** Gravelled highway
- GR** Graded road
- PR** Primitive road
- FR** Paved railroad

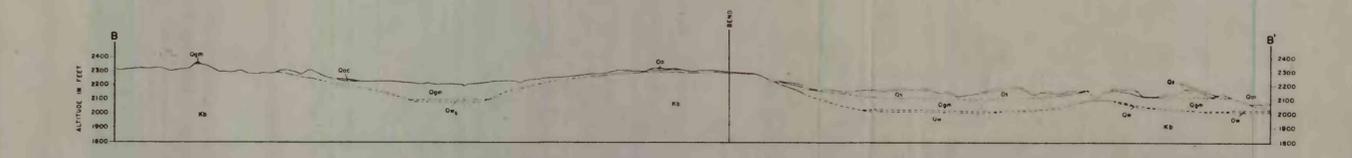
Base compiled from Bureau of Land Management township plats

FORT PECK, 1934 & 106°30'

PRELIMINARY GEOLOGIC MAP
OF THE
GLASGOW QUADRANGLE, MONTANA



INFERRED SECTION ALONG LINE A-A'; VERTICAL SCALE EXAGGERATED



INFERRED SECTION ALONG LINE B-B'; VERTICAL SCALE EXAGGERATED

U. S. Geological Survey
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This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.