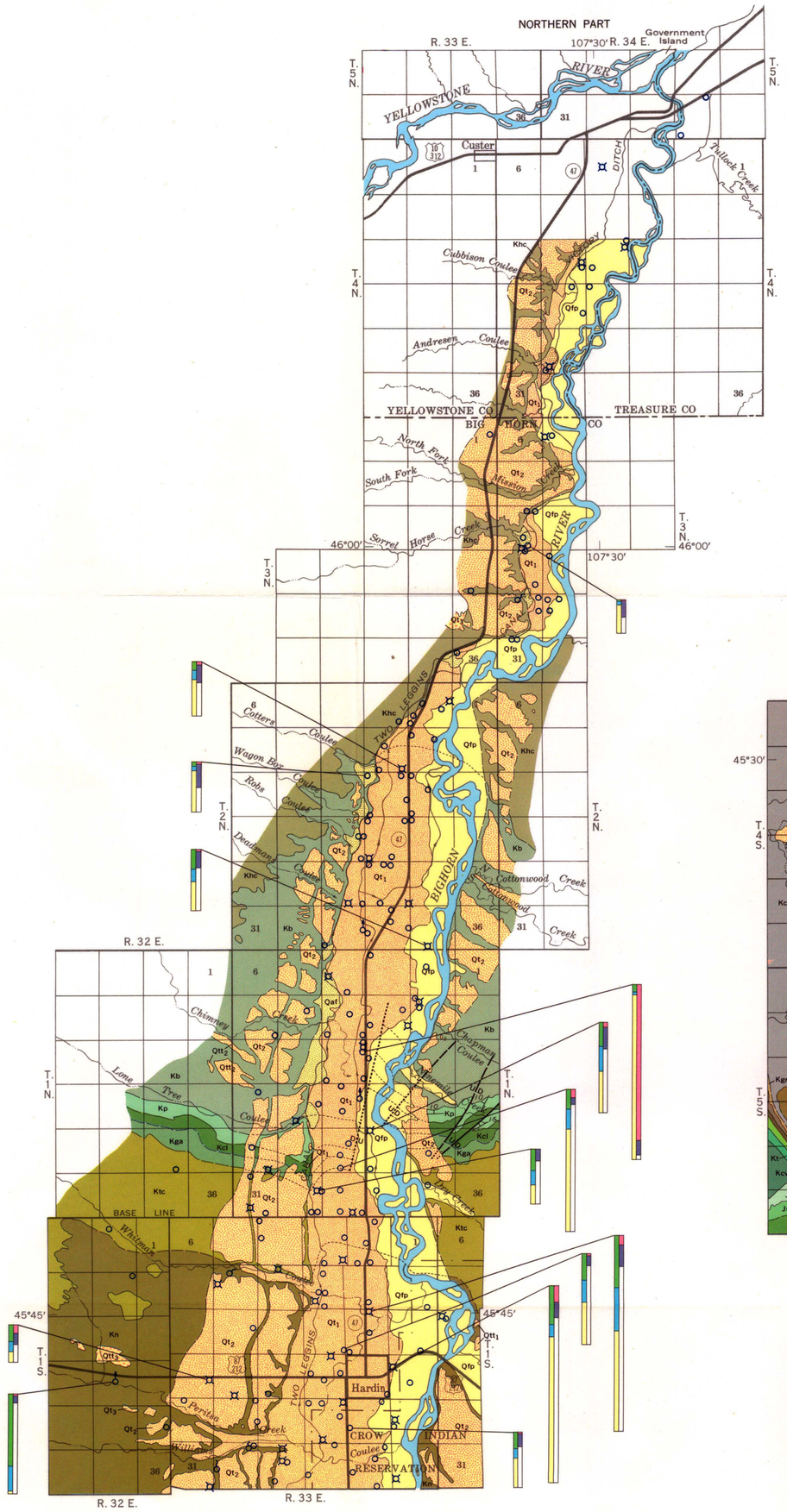
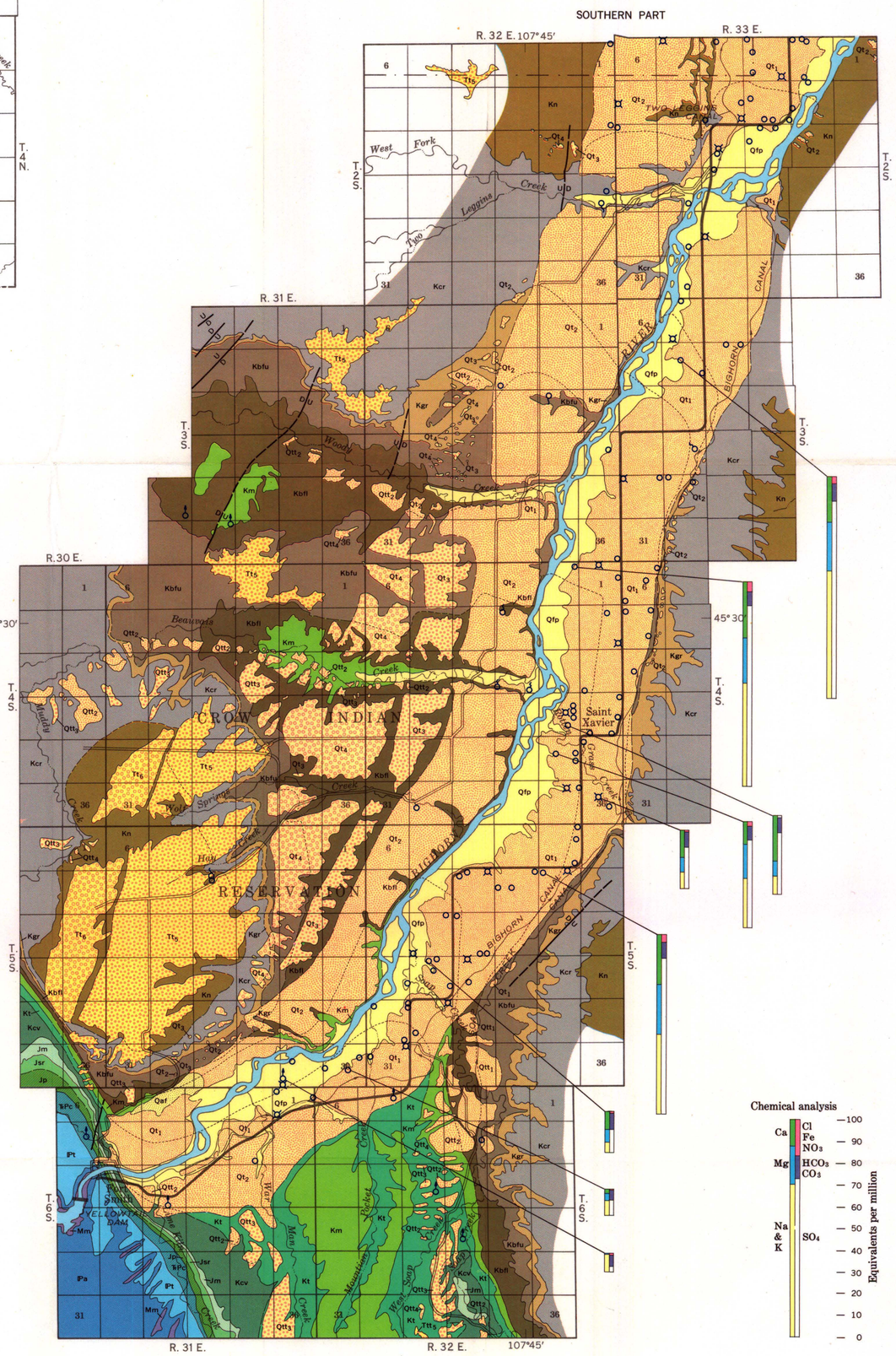


Base map prepared from Montana State General Highway Map, of Big Horn County, 1:125,000, 1955



Geology mapped by L. J. Hamilton and Q. F. Paulson, 1957–60.
Most of geology in field locations D3–31, D4–30, D4–31, and D6–32 after Richards (1955)

GEOHYDROLOGIC MAP OF THE LOWER BIGHORN VALLEY, MONTANA

SCALE 1:125 000

2 0 2 4 6 8 10 MILES

2 0 2 4 6 8 10 KILOMETERS

EXPLANATION

QUATERNARY

Recent

Qaf, Qfp — **Alluvium**
Qaf, *alluvial-fan deposits*
Qfp, *flood-plain deposits of the Bighorn River and its principal tributaries*

Pleistocene

Qt_1, Qtt_1, Qt_2, Qtt_2, Qt_3, Qtt_3, Qt_4, Qtt_4, Tt_5, Ttt_5, Tt_6 — **Alluvial-terrace deposits**
Qt_1, *lowest and youngest, to* Tt_5, *highest and oldest, terrace deposits of the Bighorn River.*
Qtt_1 *to* Ttt_5, *thinner terrace deposits of tributary streams*

TERTIARY

Pliocene

CRETACEOUS

Upper Cretaceous

Khc — Hell Creek Formation
Kb — Bearpaw Shale
Kp — Parkman Sandstone
Kcl — Clagget Shale
Kga — Gammon Shale
Ktc — Telegraph Creek Formation
Kn — Niobrara Shale
Kcr — Carlile Shale
Kgr — Greenhorn Shale
Kbfu, Kbfl — Belle Fourche Shale
Kbfu, *upper member*
Kbfl, *lower member*

Lower Cretaceous

Km — Mowry Shale
Kt — Thermopolis Shale
Kcv — Cloverly Formation

JURASSIC

Upper Jurassic

Jm — Morrison Formation
Jsr — Swift and Rierdon Formations
Jp — Piper Formation

Middle Jurassic

Ellis Group

PERMIAN AND TRIASSIC

TRPc — Chugwater Formation

PENNSYLVANIAN

IPt — Tensleep Sandstone
IPa — Amsden Formation

MISSISSIPPIAN

Mm — Madison Limestone

CARBONIFEROUS

Chemical analysis

Ca, Mg, Na & K; Cl, Fe, NO_3, HCO_3, CO_3, SO_4

Equivalents per million: 100, 90, 80, 70, 60, 50, 40, 30, 20, 10, 0

Contact
Dashed where approximately located; short dashed where inferred; dotted where concealed

Fault
Dashed where approximately located; dotted where concealed. U, upthrown side; D, downthrown side

Strike and dip of beds

Domestic stock well — Flowing well
Observation well — Spring

TRUE NORTH — MAGNETIC NORTH — 19½°
APPROXIMATE MEAN DECLINATION, 1968

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1968—W67265