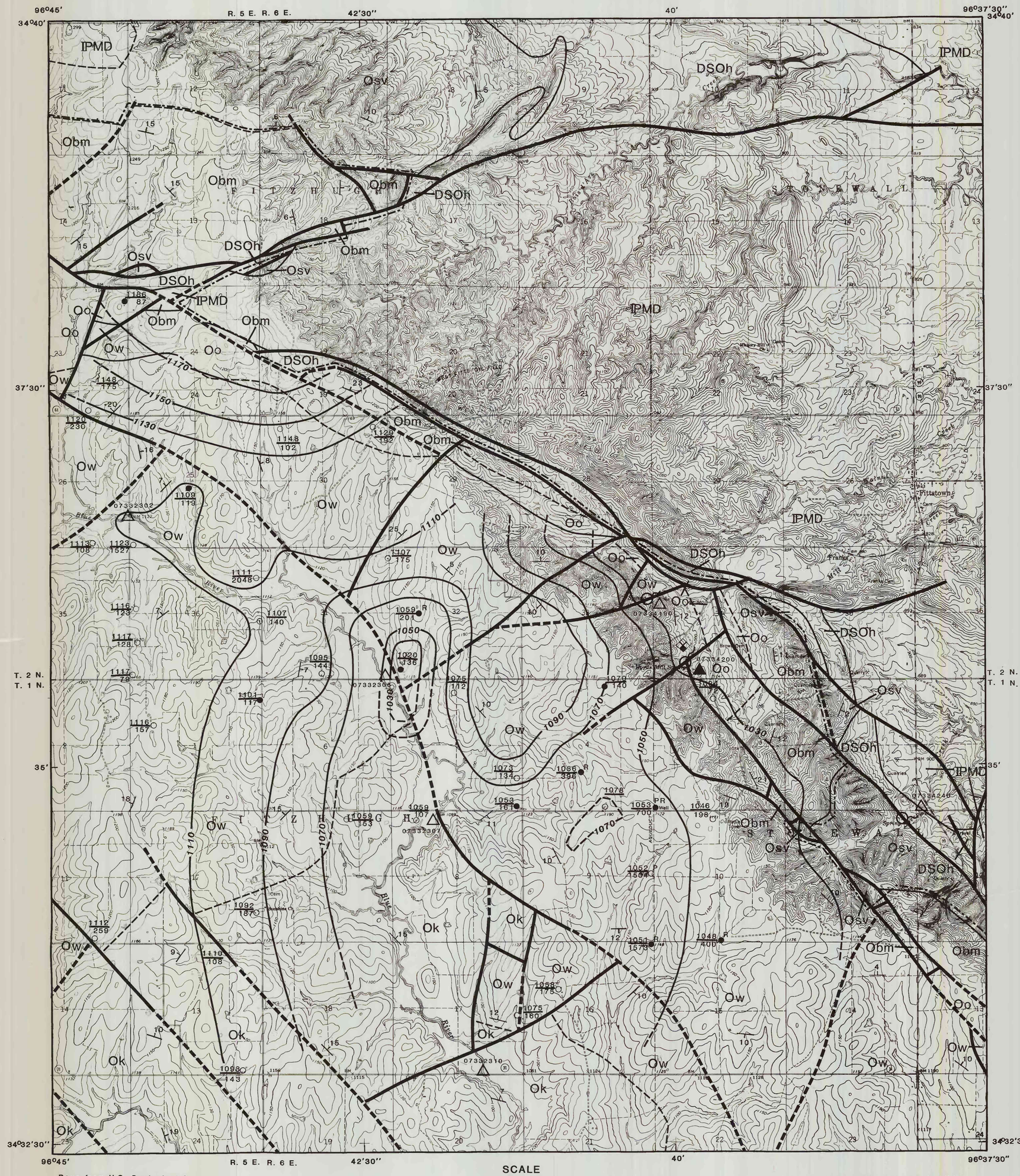
Prepared in cooperation with the
CITY OF ADA and the OKLAHOMA WATER RESOURCES BOARD

Savoca, M.E., and Bergman, D.L., 1994, Effects of municipal ground-water withdrawals on the Arbuckle-Simpson aquifer, Pontotoc County, Oklahoma



Base from U.S. Geological Survey
Fittstown, 1:24,000, photoinspected 1976,
and Ahloso, 1:24,000, photorevised 1979

SCALE
1:24,000

1 0.5 0 1 MILE

1 0.5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Geology modified from Fairchild and others, 1990. Hydrology by Mark E. Savoca, 1993.

EXPLANATION

IPMD

UNDIFFERENTIATED PENNSYLVANIAN, MISSISSIPPIAN and DEVONIAN FORMATIONS
Conglomerate, sandstone, dark-colored fissile shale, siliceous shale, siliceous siltstone, bedded chert, limestone, and siderite in thin beds and concretions. 3,325 to 4,865 feet thick

PENNSYLVANIAN, MISSISSIPPIAN, AND DEVONIAN

DSOh

HUNTON GROUP
Limestone, marlstone, and shale. 55 to 715 feet thick

SILURIAN

Osv

SYLVAN SHALE and VIOLA GROUP
Fissile shale, coarse- to fine-grained fossiliferous and cherty limestone. 460 to 600 feet thick

Obm

BROMIDE, TULIP CREEK, and McLISH FORMATIONS
Alternating beds of moderately to poorly indurated sandstone, massive to thin-bedded fossiliferous limestone, dolomite, and shale. McLish formation contains numerous phenocryst-like calcite crystals. 745 to 960 feet thick

Oo

OIL CREEK FORMATION
Sandstone, fossiliferous limestone, and thin intraformational limestone conglomerates. Shale beds occur near the top of the formation. 235 to 635 feet thick

SIMPSON GROUP

Ow

WEST SPRING CREEK FORMATION
Thick- to thin-bedded fossiliferous dolomite, interbedded with sandstone and minor chert. Dolomites are commonly siliceous, and sandstones are calcareous 875 to 1,250 feet thick

Ok

KINBLADE FORMATION
Thick-bedded fossiliferous dolomite, minor sandstone, and chert. 1,000 to 1,500 feet thick

Ocm

COOL CREEK and McKENZIE HILL FORMATIONS
Massive to thin-bedded fossiliferous dolomite, with numerous sandstone beds, chert, and silicified oolites. 1,150 to 1,125 feet thick. Unit not exposed in study area

ARBUCKLE GROUP

ORDOVICIAN

O€bf

BUTTERLY DOLOMITE, ROYER DOLOMITE, and FORT SILL LIMESTONE
Fine- to coarse-grained dolomite. Sandstone present in upper Butterly Dolomite. 570 to 1,130 feet thick. Unit not exposed in study area

CAMBRIAN

CONTACT-- Dashed where inferred

FAULT-- Dashed where inferred

24 STRIKE AND DIP OF BEDS

1050 POTENTIOMETRIC CONTOUR-- Shows altitude in feet above sea level at which water level would have stood during 1991 in tightly cased wells. Dashed where approximately located. Contour interval is 20 feet

APPROXIMATE NORTHERN BOUNDARY OF ARBUCKLE-SIMPSON AQUIFER (Fairchild and others, 1990)

SPRING

1116/157 WELL-- P indicates municipal well pumped during stress test. Number above line is altitude of water level in feet above sea level. Number below line is depth of well, in feet

1053/700 RP OBSERVATION WELL-- P indicates municipal well pumped during stress test, R indicates well equipped with a recorder. Number above line is altitude of water level in feet above sea level. Number below line is depth of well, in feet

07332302 MISCELLANEOUS STREAM-DISCHARGE MEASURING SITE-- Number is station number

07334200 CONTINUOUS-RECORD GAGING STATION-- Number is station number

PRECIPITATION STATION

HYDROGEOLOGIC MAP OF PART OF THE ARBUCKLE-SIMPSON AQUIFER, PONTOTOC COUNTY, OKLAHOMA

By
Mark E. Savoca and DeRoy L. Bergman
1993