UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE
CITY OF TUCSON
U.S. BUREAU OF RECLAMATION
UNIVERSITY OF ARIZONA

WATER-SUPPLY PAPER 1939-E
PLATE 1

GEOHYDROLOGIC MAP, TUCSON BASIN, SOUTHEASTERN, ARIZONA

EXPLANATION

SEDIMENTARY ROCKS

Holocene

Qac — Stream and flood-plain alluvial deposits
Underlie stream channels and flood plains; gravel and gravelly sand to sandy silt

Qal — Youngest terrace deposits
Underlie the Jaynes terrace; gravel and gravelly sand

Pleistocene

Qic — Intermediate terrace deposits
Underlie the Cemetery terrace; gravel and gravelly sand

Qs — Alluvial deposits undifferentiated
Underlie the oldest University or intermediate Cemetery terraces; include alluvial deposits of the Cemetery terrace or younger deposits which overlie the Fort Lowell Formation; include outcrops of the Fort Lowell Formation along streams, roadcuts, mine pits, and steep hills; gravel and gravelly sand to sandy silt

UNCONFORMITY

Qf — Fort Lowell Formation
Gravel to clayey silt

UNCONFORMITY

Miocene and Pliocene

Ts — Tinaga beds
Includes Tinaga beds as mapped by J. R. Cooper (written commun., 1967) in Sierrito Mountains, Billito II and III beds of Pashley (1966) in the foothills of the Santa Catalina and Rincon Mountains; gravel to gypsiferous clayey silt and mudstone; include basaltic andesite flows and dacite tuff

UNCONFORMITY

Oligocene

Tos — Pantano Formation
As mapped, includes Helmet Fanglomerate, San Xavier beds of Heindl (1939), and Billito I beds of Pashley (1966); gravel, sandstone, mudstone, and gypsiferous mudstone; includes tuff beds and interbedded volcanic flows

UNCONFORMITY

Upper Cretaceous, Paleocene, and Eocene

Mes — Sedimentary rocks undifferentiated
Conglomerate, sandstone, mudstone, shale, and some limestone; interbedded volcanic flows, tuffs, and conglomeratic tuff; includes limestone and quartzite of Paleozoic age

UNCONFORMITY

pCt — Quartzite

Part of aquifer where saturated

Aquifer

QUATERNARY

TERTIARY

IGNEOUS AND METAMORPHIC ROCKS

Tv — Flows and tuff
Basaltic andesite, dacite, some interbedded conglomerate, and sandstone

Tvi — Intrusive necks and dikes
Dacite and andesite

UNCONFORMITY

Tov — Flows, tuff, agglomerate, and volcanic breccia
Basaltic andesite to rhyolite; rhyodacite and some interbedded conglomerate, sandstone, and siltstone

UNCONFORMITY

TKv — Welded tuff, breccia, flows, tuff, and interbedded sedimentary rocks
Andesite to dacite, rhyodacite, conglomerate, sandstone, gray shale, and siltstone

TKi — Intrusive plugs
Quartz monzonite, quartz latite porphyry, diorite, and granodiorite

CRETACEOUS AND TERTIARY

UNCONFORMITY

Mv — Flows, welded tuff, agglomeratic tuff, and volcanic breccia; interbedded sedimentary rocks
Rhyolite, latite, rhyodacite, dacite, and andesite; minor interbedded conglomerate, sandstone, quartzite, and mudstone

Mi — Intrusive plugs
Granite and monzonite

MESOZOIC AND PALEOZOIC

UNCONFORMITY

pCg — Intrusive and metamorphic rocks
Granite, granitic gneiss, and schist; include some granite intrusives of younger age and the Catalina Gneiss of DeJoia (1959)

PRECAMBRIAN

Contact
Long dashed where approximately located; short dashed where indefinite or inferred; queried where probable; dotted where concealed. Contacts in cross sections are based also on wells not shown in cross section; some contacts in sections are diagrammatic to show inferred form of contact

High-angle fault
Long dashed where approximately located; short dashed where inferred; queried where probable; dotted where concealed; U, upthrown side; D, downthrown side

Low-angle fault
Shows dip; dotted where concealed

Anticline — Syncline
Approximately located; showing direction of plunge

Strike and dip of beds

Line of equal transmissivity
Represents average transmissivity of the upper part of the aquifer, in thousands of gallons per day per foot; Intervals, 50 and 130 thousands of gallons per day per foot

Boundary of aquifer
Approximate; used as boundary of zero ground-water flow in analog model

Line of section
Shows wells along and projected into the section; sections shown on plate 2. — — indicates where horizontal spacing increased (not to scale) on sections so that data could be shown clearly

Water-level contour
Shows approximate altitude of water level, spring 1966, in the upper part of the aquifer; contour intervals 25, 50, 100, 200, 300, and 1000 feet

Tailings pond in use, 1970

Base from U.S. Geological Survey, Cortaro and Tucson, 1946–57; San Xavier Mission, 1940–57; Twin Buttes, 1939–57; Mt. Lemmon, Bellota Ranch, and Rincon Valley, 1957; Sahuarita and Empire Mts., 1958

SCALE 1:62 500
1 ½ 0 1 2 3 4 MILES
1 .5 0 1 2 3 4 KILOMETERS
CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Geology by E. S. Davidson and modified from Bikerman and Damon, 1966; Brown, 1939; Cooper (1960a; written commun., 1967); Drewes, 1968c; Drewes and Finnell, 1968; Heindl, 1959; Heindl and others, 1962; Kinnison, 1958, 1959a, b; E. J. McCullough (oral commun., 1969); Pashley, 1966; Percious, 1968; Peterson, 1968; Tolman, 1909, and Wilson, Moore, and O'Haire, 1960

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1972—W77101