GEOHYDROLOGY AND SUSCEPTIBILITY OF MAJOR AQUIFERS TO SURFACE CONTAMINATION IN ALABAMA; AREA 12

By John C. Scott and Riley H. Cobb

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CONVERSION FACTORS

For use of readers who prefer to use metric (International System) units, conversion factors for inch-pound units used in this report are listed below:

Multiply inch-pound unit	By	To obtain metric unit
inch (in.)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)
cubic foot per second per square mile [$(ft^3/s)/mi^2$]	0.01093	cubic meter per second per square kilometer [$(m^3/s)/km^2$)
gallon per minute (gal/min)	0.06308	liter per second (L/s)
Million gallons per day (Mgal/d)	0.04381	cubic meter per second (m^3/s)

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

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ABSTRACT

The U.S. Geological Survey, in cooperation with the Alabama Department of Environmental Management, is conducting a series of geohydrologic studies to delineate the major aquifers and their susceptibility to contamination in Alabama. This report delineates and describes the geohydrology and susceptibility of the major aquifers to contamination in Area 12 which includes Coffee, Dale, Henry, Houston, and Geneva Counties.

The major aquifers in Area 12 are the Upper Floridan aquifer which consists mainly of the Ocala Limestone; the Lisbon aquifer which consists of sand beds in the Lisbon, Tallahatta, and Hatchetigbee Formations; the Nanafalia-Clayton aquifer which consists of sand beds in the Nanafalia Formation and sand and limestone beds in the Clayton Formation; and the Providence-Ripley aquifer which consists of sand beds in the Providence Sand and the Ripley Formation. Water in the Upper Floridan aquifer generally is unconfined; water in the other major aquifers is confined. The Nanafalia-Clayton aquifer is the most widely-used aquifer for public water supplies in Area 12. The Providence-Ripley aquifer is used in northern and central parts of the study area, and the Upper Floridan and Lisbon aquifers are used in the southern part.

Maximum withdrawals of ground water for public water supplies are estimated to be about 42 million gallons per day. Maximum withdrawals for irrigation are estimated to be 15 to 20 million gallons per day, and withdrawals for self-supplied industrial and domestic uses are estimated to be 3 and 2.5 million gallons per day, respectively. Long-term withdrawals of water from the Nanafalia-Clayton aquifer have resulted in significant declines in the potentiometric surface in the vicinities of Dothan, Fort Rucker, and Enterprise. The potentiometric surface has declined more than 100 feet at Dothan and 50 to 60 feet at Fort Rucker and Enterprise. The potentiometric maps for the Upper Floridan, Lisbon, and Providence-Ripley aquifers do not show significant declines in the potentiometric surfaces of these aquifers.

Recharge areas for all the major aquifers are susceptible to contamination. However, because the recharge areas for the Providence-Ripley, Nanafalia-Clayton, and Lisbon aquifers are remote from their areas of use in Area 12, the probability of contamination is low. The recharge area for the Upper Floridan aquifer generally coincides with its area of use in the study area and consists of a relatively-flat sandy landscape that is extensively used for farming. Because of the highly-permeable nature of the recharge area and the use of insecticides and herbicides in the farming operations, the Upper Floridan aquifer in Area 12 is highly susceptible to contamination.

INTRODUCTION

The Alabama Department of Environmental Management (ADEM) is developing a comprehensive program designed to protect from surface contamination "Class I and Class II" ground waters (U.S. Environmental Protection Agency, 1984) that occur in major aquifers. The U.S. Geological Survey, in cooperation with ADEM, is conducting a series of geohydrologic studies to delineate the major aquifers in Alabama, their recharge areas, and areas susceptible to contamination. This report summarizes these factors for major aquifers in Area 12--Coffee, Dale, Geneva, Henry, and Houston Counties (see plate 1).

Purpose and Scope

The purpose of this report is to describe the geohydrology of the major aquifers and their susceptibility to contamination from the surface. Geologic and hydrologic data compiled as part of previous investigations provided about 75 percent of the data used to evaluate the major aquifers in the area. All wells used for municipal and rural public water supplies were inventoried, and water levels were measured in these wells where possible. Data on water use were compiled during the well inventory. Water-level data were used to compile generalized potentiometric maps of the major aquifers. Susceptibility of aquifers to contamination from the surface is based on the permeability of soils and surficial sediments beneath the soils, the configuration of the land surface, land use, and the remoteness of recharge areas from areas of ground-water withdrawals.

Location and Extent of the Area

The study area is in southeastern Alabama and comprises an area of about 2,950 mi^2 (square miles). The area includes the cities of Dothan, Elba, Enterprise, Geneva, and Ozark, and numerous smaller towns and communities (plate 1). The total population of the five-county area was 200,541 in 1980 (U.S. Department of Commerce, Bureau of the Census, 1980). Slightly more than one-half of the population lives in urban areas (Alabama Department of Economic and Community Affairs, 1983). All public water supplies in the area are from ground-water sources, and all self-supplied water for household use is from ground water.

Physical Features

The study area is in the Southern Red Hills and Dougherty Plain districts of the East Gulf Coastal Plain physiographic section (Sapp and Emplaincourt, 1975). A small area in the northeastern corner of Henry County is in the Alluvial Plain district (see fig. 1). The Southern Red Hills district is characterized by a relatively hilly terrain that is dissected by streams which generally flow southward. The Dougherty Plain district is a relatively flat upland that slopes gently southward except where dissected by streams. The Alluvial Plain is a relatively flat lowland area that is adjacent to the Chattahoochee River.

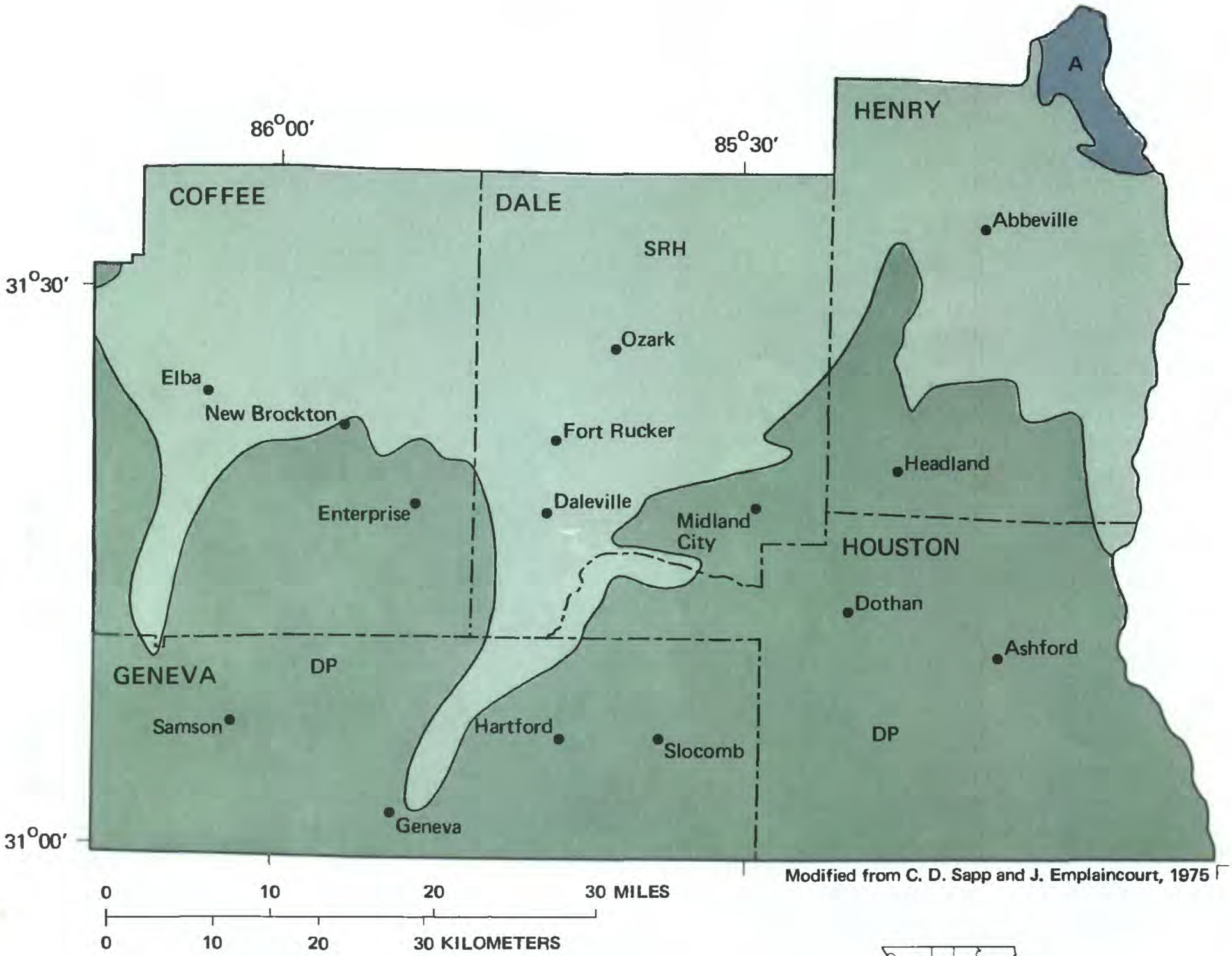


Figure 1.--Physiographic divisions of the study area.

Surface drainage in the area is through the Chattahoochee, Choctawhatchee, and Pea Rivers and tributary streams (fig. 1). Tributaries to the Chattahoochee River drain eastern Henry and Houston Counties. The Choctawhatchee River and its tributaries drain western Henry County, most of Dale County, the southeastern part of Coffee County, the eastern part of Geneva County, and the northwestern part of Houston County. The Pea River and its tributaries drain the northwestern part of Dale County and western parts of Coffee and Geneva Counties.

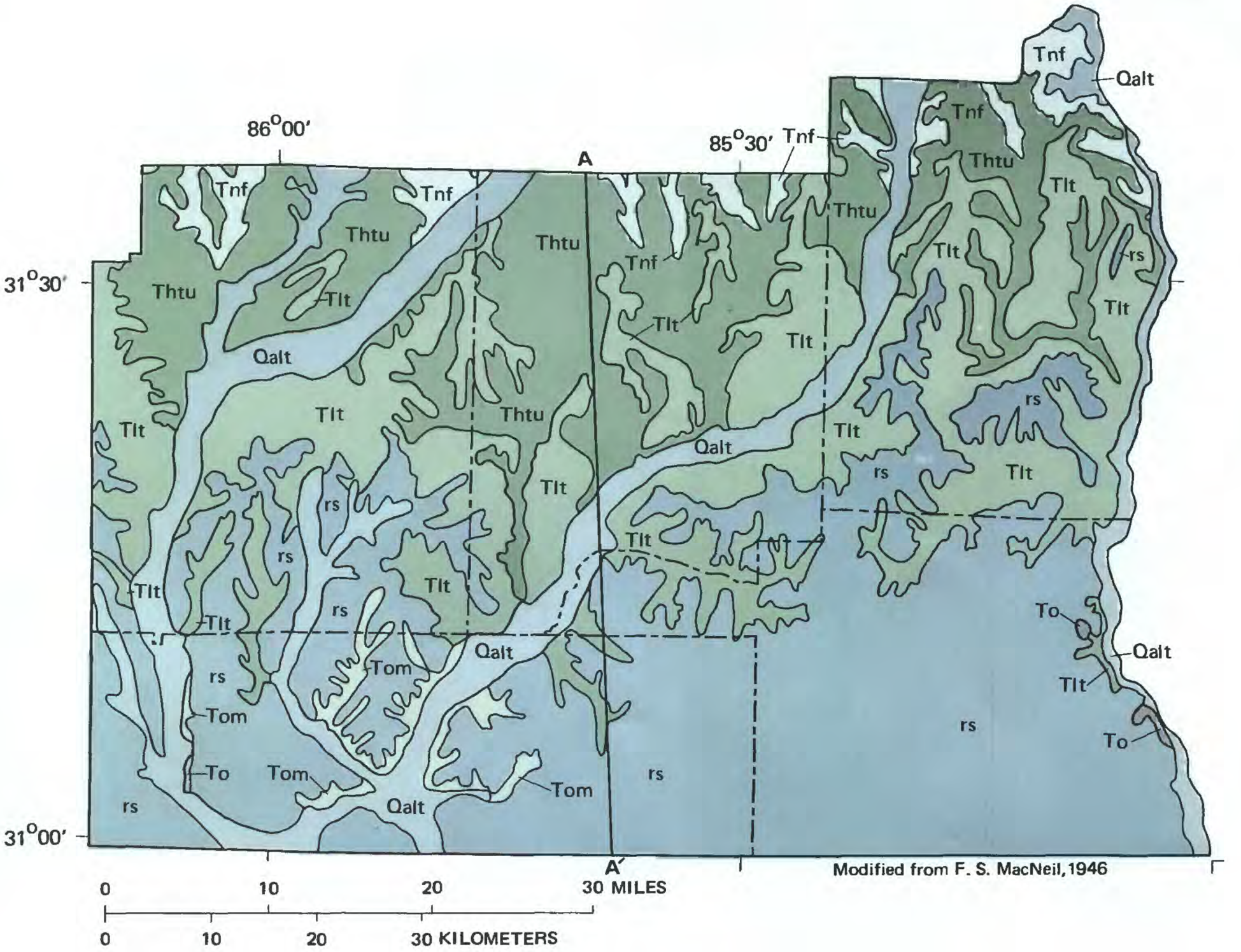
Previous Geologic and Hydrologic Studies

The first known published geologic map that included the study area was Michael Toumey's geologic map of Alabama (Toumey, 1858). The map was included in his second Biennial Report of the Alabama State Geologist. More detailed geologic maps of the State were prepared later by Smith and others (1894) and Adams and others (1926). A map of the Tertiary formations in Alabama was prepared by MacNeil (1946). Geologic maps of Coffee, Dale, Geneva, Henry, and Houston Counties were compiled in the 1960's by the U.S. Geological Survey in cooperation with the Geological Survey of Alabama. The geologic map in this report (fig. 2) is modified from the map by MacNeil (1946).

Ground-water data for the study area were published as early as 1907 in "Underground Water Resources of Alabama" (Smith, 1907). More recent data are included in LaMoreaux (1948) and Carter and others (1949). Water-availability studies were made in the 1960's by the U.S. Geological Survey in cooperation with the Geological Survey of Alabama. Results of these studies were published in county water-availability reports by the Geological Survey of Alabama. A report on the hydrology of the Tertiary-Cretaceous aquifer system in the vicinity of Fort Rucker Aviation Center was published in 1984 (Scott and others, 1984). Two reports recently published by the Geological Survey of Alabama describe the geohydrology of a six-county area in southeast Alabama (Moffett and others, 1985), locate all wells that produce 50 gal/min (gallons per minute) or more, and list types of geohydrologic data available for each well (Shamburger and Moore, 1985).

Acknowledgments

The authors wish to thank the Public Water-Supply Section of ADEM for making available records for public water-supply wells in the study area. Special appreciation is extended to the waterworks managers and operators of water systems in the study area who assisted in the location of public water-supply wells and furnished information on well construction and water use.



EXPLANATION

GEOLOGIC UNITS

Tertiary	Eocene	Tom	Ocala Limestone and Moodys Branch Formation	Qalt	Alluvium and terrace deposits
		Tlt	Lisbon and Tallahatta Formations	rs	Residuum
	Paleocene	Thtu	Hatchetigbee Formation and Tuscahoma Sand	To	Ocala Limestone
		Tnf	Nanafalia Formation		

Quaternary	Holocene and Pleistocene	
Tertiary	Miocene and Pliocene	
	Eocene	

Figure 2.--Generalized geology of the study area.

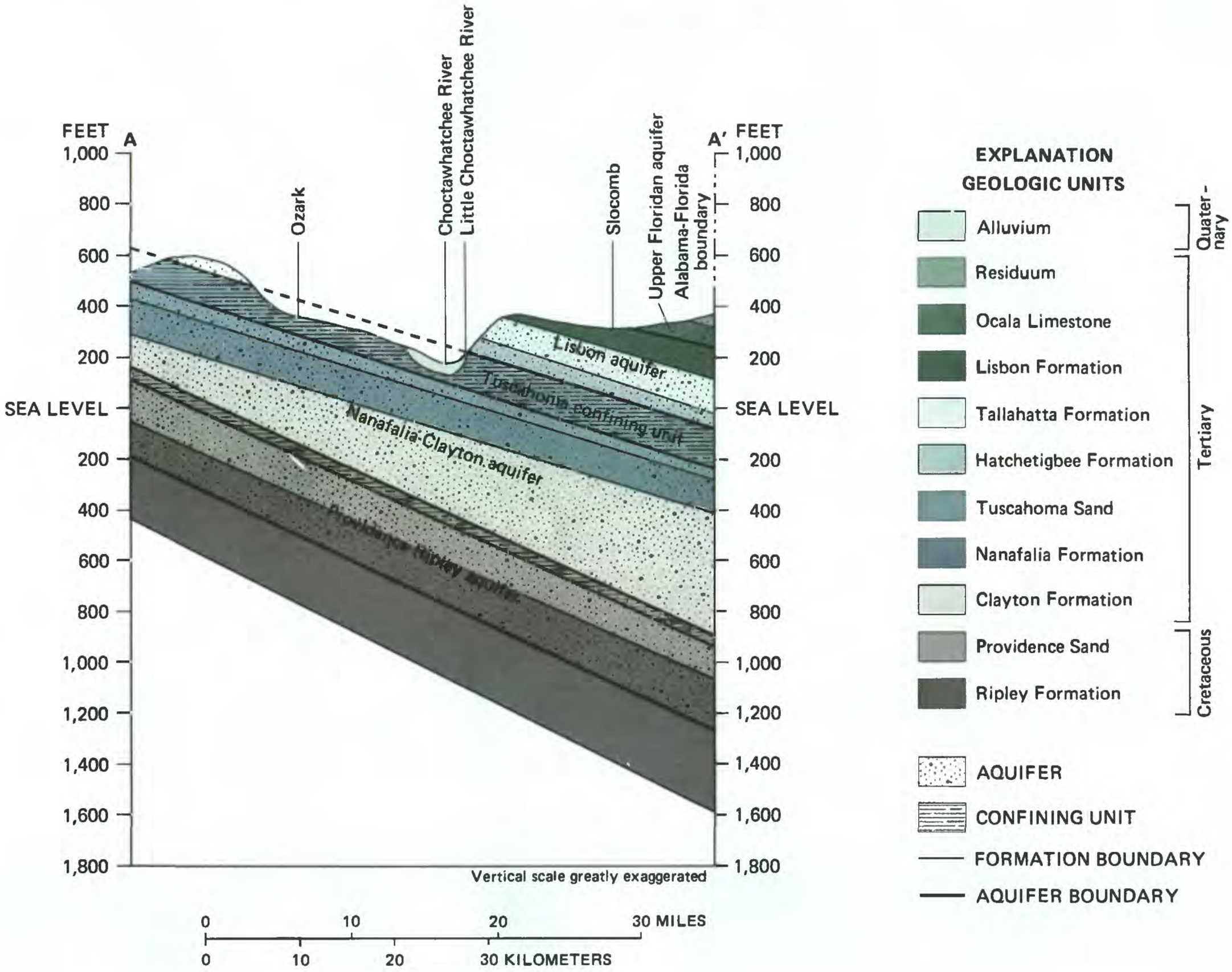


Figure 3.--Generalized subsurface section of the major aquifers in the study area (trace of section shown in Figure 2).

GEOHYDROLOGY OF THE STUDY AREA

Geologic formations that comprise major aquifers in the study area include, from oldest to youngest, the Ripley Formation and Providence Sand of Cretaceous age; the Clayton and Nanafalia Formations, the Tuscahoma Sand, the Hatchetigbee, Tallahatta, and Lisbon Formations, and the Ocala Limestone of Tertiary age (see figs. 2 and 3). These formations strike generally westward and dip southward from 15 to 40 feet per mile. Table 1 gives the thickness, lithologic characteristics, and water-bearing properties for each geologic formation underlying the area that is an aquifer, or that serves as a confining layer between aquifers.

Ripley Formation

The Ripley Formation crops out north of the study area in Barbour, Bullock, and Pike Counties, and underlies the entire study area. In the outcrop the Ripley is subdivided into a lower Cusseta Sand Member and an upper unnamed member (Eargle, 1948). However, examination of driller's and geophysical logs indicates that subdivision of the Ripley Formation in the study area is impractical. The Ripley Formation in the study area consists of marine sand, calcareous clay, calcareous sandstone, and sandy limestone. The unit ranges in thickness from 400 to 500 feet in the study area.

The Ripley Formation is a potential major aquifer in the northern part of the study area. The unit is developed in conjunction with the overlying Providence Sand in some wells in northern Dale County. Geophysical logs and drill cuttings from test wells indicate that the Ripley is not a major aquifer in the southern part of the study area.

Providence Sand

The Providence Sand overlies the Ripley Formation and crops out north of the study area in Barbour, Bullock, and Pike Counties. The Providence Sand underlies the entire study area. In the outcrop the Providence Sand is subdivided into a lower Perote Member and an upper unnamed member (Eargle, 1950). These members are not recognizable from geophysical logs and drill cuttings of wells in the study area. The Providence Sand consists of 150 to 250 feet of sand, sandy limestone, sandy clay, and calcareous sandstone.

The Providence Sand is a major aquifer in Coffee, Dale, and Henry Counties, and in northern Houston County. Most wells screened in the Providence Sand are also screened in the overlying Clayton Formation, and some are also screened in the underlying Ripley Formation. Wells screened solely in the Providence Sand produce as much as 400 gal/min; wells screened in the Providence Sand in conjunction with other aquifers produce as much as 1,200 gal/min. The Providence Sand has not been developed as a source of water supply in Geneva County. A clay zone at the top of the Providence Sand is a confining layer between the Providence Sand and the overlying Clayton Formation.

Clayton Formation

The Clayton Formation, the basal Tertiary unit in the area, overlies the Providence Sand and crops out north of the study area in central Barbour and Pike Counties. The Clayton Formation in the outcrop consists of a basal sand that is overlain by limestone, sandy limestone, and sandy clay. The Clayton Formation thickens from 100 to 150 feet at outcrops to 300 feet or more in the subsurface in Dale and Houston Counties. The unit in this area consists of about 150 feet of sand interbedded with thin calcareous sandstone beds overlain by about 150 feet of massive to sandy limestone and calcareous clay.

The limestone in the Clayton Formation is a major source of water in the northern part of the study area, but apparently loses most of its permeability in the southern part. The lower sand zone in the Clayton Formation is a major aquifer in Coffee, Dale, and Houston Counties where it is usually developed in conjunction with the overlying Nanafalia Formation and the basal part of the Tuscahoma Sand. Wells screened solely in the Clayton Formation produce as much as 500 gal/min. Wells screened in the Clayton Formation in conjunction with other aquifers produce as much as 1,200 gal/min. The Clayton Formation is widely used as a source of water in Coffee, Dale and Henry Counties, and some wells at Dothan in Houston County are screened in the Clayton Formation. The Clayton Formation has not been developed as a source of water in Geneva County.

Nanafalia Formation

The Nanafalia Formation overlies the Clayton Formation and crops out in southern Barbour and Pike Counties, and in northernmost parts of Coffee, Dale, and Henry Counties. Outcrops of the Nanafalia Formation include a basal gravelly sand zone, a middle fossiliferous glauconitic sand zone, and an upper zone consisting of calcareous clay and calcareous claystone, siltstone, and sandstone. In the outcrop area of the Nanafalia Formation in Barbour County, Gibson (Williams and others, 1982a) renamed the middle and upper zones of the Nanafalia Formation the Baker Hill Formation. Updip outcrops of these beds in Barbour County consist of bauxite, bauxitic, kaolinitic, and carbonaceous clay, and micaceous sand. These lithologies generally do not extend downdip in the subsurface to the study area. Therefore, the Baker Hill Formation, if present in the study area, is included with the Nanafalia Formation. The Nanafalia Formation ranges in thickness from 75 feet in northern Coffee and Henry Counties to 200 feet in Geneva County.

The Nanafalia Formation is a major aquifer in most parts of the study area. Wells screened in the Nanafalia Formation generally are also screened in the overlying basal part of the Tuscahoma Sand and in the underlying Clayton Formation. Wells screened in the Nanafalia Formation in conjunction with the underlying Clayton Formation and the basal part of the overlying Tuscahoma Sand commonly produce 500 gal/min or more. A well screened solely in the Nanafalia Formation at the city of Geneva produced 600 gal/min in 1964 with a drawdown in water level of only 31 feet.

Tuscahoma Sand and Hatchetigbee Formation

The Tuscahoma Sand and Hatchetigbee Formation overlie the Nanafalia Formation and crop out in and north of the study area (fig. 2). The two units are undifferentiated on the geologic map because of their similar lithologies, and because of the thinness of the Hatchetigbee at outcrop.

The Tuscahoma Sand, which overlies the Nanafalia Formation, consists of a basal zone of glauconitic sand 25 to 50 feet thick overlain by laminated to thin-bedded carbonaceous clay and micaceous silty sand. The total thickness of the Tuscahoma Sand ranges from 90 feet in northern Henry County to 200 feet in southern Geneva and Houston Counties.

The Hatchetigbee Formation overlies the Tuscahoma Sand and consists of the basal Bashi Marl Member of former usage and an unnamed upper member. The Bashi Marl Member, which consists of 5 to 10 feet of fossiliferous glauconitic silty sand, was raised in rank to the Bashi Formation by Gibson (Williams and others, 1982b). It is included in the Hatchetigbee Formation in this report. The upper part of the Hatchetigbee Formation consists mainly of thin-bedded to massive carbonaceous clay. The thickness of the unit ranges from 10 feet at updip outcrops to 50 feet in the southern part of the study area.

The Hatchetigbee-Tuscahoma unit is not a major aquifer in the study area. The basal sand in the Tuscahoma Sand is commonly screened in conjunction with the underlying Nanafalia and Clayton Formations. The clay in the upper part of the Tuscahoma Sand is a confining unit between the basal sand in the Tuscahoma Sand and sand beds in the overlying Hatchetigbee Formation. The total thickness of the Tuscahoma Sand and the Hatchetigbee Formation ranges from 100 to 250 feet.

Tallahatta and Lisbon Formations

The Tallahatta and Lisbon Formations overlie the Hatchetigbee-Tuscahoma unit and crop out across a large part of the study area (fig. 2). The two units are undifferentiated on the geologic map because of their thinness and lithologic similarity at updip outcrops.

The Tallahatta Formation overlies the Hatchetigbee Formation and consists of glauconitic sand, calcareous clay, and thin beds of siltstone and calcareous sandstone. The Tallahatta Formation ranges in thickness from 25 feet in northern Coffee County to 150 feet in the southern part of the study area.

The Lisbon Formation overlies the Tallahatta Formation and consists of massive sand, sandy clay, and sandy limestone. The Lisbon Formation weathers to massive clayey sand that caps uplands throughout much of the study area. The Lisbon Formation ranges in thickness from 20 feet in northern Henry County to more than 200 feet in the southern part of the study area.

The Lisbon and Tallahatta Formations together comprise a major aquifer in the southern part of the study area. This aquifer is developed as a supplemental source of water at Dothan and the source for several small towns in Geneva County and southern Houston County. Wells screened in both formations commonly produce 500 gal/min or more. The aquifer is also developed in conjunction with the overlying Ocala Limestone in southern Geneva and Houston Counties for irrigation. These wells commonly produce as much as 800 gal/min.

Moodys Branch Formation and Ocala Limestone

The Moodys Branch Formation and Ocala Limestone overlie the Lisbon Formation in central and southern parts of Houston County and the southern part of Geneva County (fig. 2). Because of the dissolution of the Ocala Limestone and the resulting residual mantle developed at the surface, outcrops of the Moodys Branch Formation and Ocala Limestone are rare in the study area. The Moodys Branch Formation, which directly overlies the Lisbon Formation, consists of a basal bed of fossiliferous glauconitic sand that is overlain by calcareous clay. The Ocala Limestone overlies the Moodys Branch Formation and consists mainly of soft coquinoidal limestone. The limestone of the Ocala Limestone has been removed by solution throughout much of its area of outcrop resulting in jumbled beds of residual clay, chert boulders, and fragments. The Ocala-Moodys Branch unit generally ranges in thickness from 10 feet in the vicinity of Dothan to 140 feet in southwestern Geneva County.

The Ocala Limestone is a major aquifer only in southernmost parts of the study area. The Ocala Limestone is used in conjunction with the underlying Lisbon and Tallahatta Formations at the towns of Ashford and Cottonwood in southern Geneva and Houston Counties. Irrigation wells completed in the Ocala Limestone produce as much as 1,000 gal/min. Some irrigation wells in the study area are completed in the Ocala Limestone and in the underlying Lisbon and Tallahatta Formations. The Ocala Limestone is a potential source of large water supplies in the southwestern part of Geneva County. The Ocala Limestone and other underlying and overlying limestones form the Upper Floridan aquifer in Florida. The term Upper Floridan aquifer is used for the Ocala Limestone in this study area.

Residuum

Residual deposits overlie the Moodys Branch Formation and Ocala Limestone in the southern part of the study area (see fig. 2). These deposits, which range in age from Eocene to Miocene, consist of residual clay and chert boulders derived from the dissolution of Eocene and Oligocene limestone and sand, gravel and clay that is probably of Miocene age. These deposits, which are slumped and jumbled because of the dissolution of limestone, generally range in thickness from 5 to 100 feet.

Terrace and Alluvial Deposits

Terrace and alluvial deposits overlie older formations in the valleys of the Chattahoochee, Choctawhatchee, and Pea Rivers, and larger creeks in the study area (fig. 2). These deposits, which generally range in thickness from 10 to 40 feet, consist mainly of silty clay, silt, sand, and gravel. The terrace deposits are 10 to 50 feet above the present flood plains of the streams; the alluvial deposits underlie the present flood plains of the streams.

The terrace and alluvial deposits generally do not have sufficient saturated thickness to be a major aquifer. In some areas, wells developed in the alluvial deposits probably would produce as much as 100 gal/min.

HYDROLOGY OF THE MAJOR AQUIFERS

The major aquifers in the study area are the Upper Floridan aquifer which consists mainly of the Ocala Limestone; the Lisbon aquifer which consists of sand beds in the Lisbon, Tallahatta, and Hatchetigbee Formations; the Nanafalia-Clayton aquifer which consists of the basal part of the Tuscahoma Sand, and the Nanafalia and Clayton Formations; and the Providence-Ripley aquifer which consists of the Providence Sand and the Ripley Formation. Water in the Upper Floridan aquifer generally occurs under water-table conditions in the study area. Water in the other major aquifers occurs under artesian conditions. Recharge areas for the major aquifers and areas susceptible to contamination are shown on plate 1. Also shown on plate 1 are locations of public water-supply wells. Construction of wells, water levels, and other pertinent well data are given in table 2.

Recharge and Movement of Ground Water

The source of recharge to the major aquifers is rainfall. The average annual rainfall in the study area is about 56 inches (National Oceanic and Atmospheric Administration, 1985). A large part of the rainfall, generally 20 to 25 inches per year, runs off during and directly after rainstorms (Carter and others, 1949). Most of the remainder is returned to the atmosphere by evaporation, and transpiration from trees and other plants. A small part infiltrates to the water table and recharges the aquifers. The amount of annual recharge to aquifers may be estimated from the base (dry-weather) flow of streams which is ground-water discharge. The 7-day low flow of streams that occurs on the average every 2 years (7-day Q_2) can be used for this estimate if ground-water withdrawals in the basins are minimal. The average 7-day Q_2 for streams in Area 12 is about 0.335 $(ft^3/s)/mi^2$ (cubic feet per second per square mile of drainage area) (Hayes, 1978). This discharge, when converted to inches per year, is about 4.5 inches.

The recharge area for the Upper Floridan aquifer is mainly in the southern parts of Geneva and Houston Counties which is also its area of use (plate 1). The recharge area for the Lisbon aquifer is mainly in Coffee, Dale, and Henry

Counties, and northern Houston and Geneva Counties. The recharge area for the Nanafalia-Clayton aquifer is mainly in southern Pike and Barbour Counties, immediately north of the study area. The recharge area for the Providence-Ripley aquifer is in Barbour, Bullock, and Pike Counties. Recharge areas for the Nanafalia-Clayton and Providence-Ripely aquifers are delineated and described in the report for Area 9 (Kidd, 1987). Water moves downdip from areas of recharge to areas of natural discharge or areas of ground-water withdrawals.

Natural Discharge and Ground-Water Withdrawals

A large part of the recharge discharges through seeps and springs to provide the base flow of streams. Most of the remainder is discharged through wells, mainly at large pumping centers. The largest pumping centers in Area 12 are Dothan, Enterprise, Fort Rucker, and Ozark. Maximum pumpage in 1986 was about 16 Mgal/d (million gallons per day) at Dothan, about 6.1 Mgal/d at Enterprise, about 4.1 Mgal/d at Fort Rucker, and about 4.2 Mgal/d at Ozark. The major aquifers for these pumping centers are the Providence-Ripley and Nanafalia-Clayton aquifers. Dothan uses the Lisbon aquifer for a supplemental source of water. Other pumping centers that withdraw ground water for public supplies in the area include the towns of Abbeville, Daleville, Elba, Geneva, Hartford, and 33 other towns and rural water systems. The total maximum withdrawal for public water supplies in the area is estimated to be about 42 Mgal/d.

Ground water is used extensively for irrigation in southern parts of the study area. Maximum withdrawals for irrigation are estimated to be 15 to 20 Mgal/d. These withdrawals are sporadic, depending on rainfall deficiencies during the growing season. Estimated total self-supplied (domestic wells) ground-water use in the area is about 2.5 Mgal/d. This estimate is based on the percentage of each county that is not supplied by public water systems, the rural population in each county, and an estimated per-capita water use of 100 gal/d (gallons per day).

Available data indicate that ground-water withdrawals for industrial uses total about 3 Mgal/d. This total does not include water supplied to industries by public water systems.

Effects of Withdrawals from the Aquifers

Large long-term withdrawals of water from the major aquifers have resulted in the formation of depressions on the potentiometric surface of the aquifers in some areas. The Nanafalia-Clayton aquifer is the most extensively-used aquifer in the study area. The aquifer is the principal source of water at Dothan and Fort Rucker, and is the sole source of water for Enterprise, Geneva, and several other small towns and rural water systems in the area. Increased pumpage from the aquifer at Dothan, Enterprise, and Fort Rucker during the past 40 years has resulted in a significant decline in the potentiometric surface of water in the aquifer (fig. 4). The potentiometric surface has

declined more than 100 feet at Dothan and 50 to 60 feet at Enterprise and Fort Rucker. Smaller depressions on the potentiometric surface have developed in the vicinities of Midland City and Goodman due to local pumpage. No significant declines of the potentiometric surfaces of the Providence-Ripley, Lisbon, or Upper Floridan aquifers are apparent from the potentiometric maps (figs. 5, 6, and 7). The potentiometric maps (figs. 4, 5, and 6) were modified from potentiometric surfaces presented in reports on the Regional Aquifer-Systems Analysis for the Southeastern Coastal Plain aquifer system (Williams and others, 1986a, 1986b, and 1986c). The potentiometric map for the Upper Floridan aquifer (fig. 7) was prepared from available water-level data.

SUSCEPTIBILITY OF THE AQUIFERS TO SURFACE CONTAMINATION

All of the areas of recharge for the major aquifers in Area 12 are susceptible to surface contamination (plate 1). However, the recharge areas for the Providence-Ripley, Nanafalia-Clayton, and Lisbon aquifers generally are remote from their areas of use, and are mainly in rural terrains that are used for timberlands, farms, or pastures. Because of the remoteness of these recharge areas from the areas of ground-water withdrawal in Area 12 and because of the rural character of the recharge areas, the probability of significant contamination is low.

Large areas of depression in the potentiometric surface of the Nanafalia-Clayton aquifer have developed near Dothan, Enterprise, and Fort Rucker Aviation Center. Within these areas, the resulting head differences between aquifers could cause downward leakage from the Lisbon aquifer to the Nanafalia-Clayton aquifer. However, a zone of clay between the two aquifers is a confining layer that should prevent significant downward leakage.

The recharge area for the Upper Floridan aquifer generally coincides with its area of ground-water withdrawal (plate 1), and consists of a relatively flat sandy landscape containing numerous depressions formed by the solution of underlying limestone in the Upper Floridan aquifer. The residuum remaining from the dissolution of the limestone is moderately to highly permeable, and is hydraulically connected to the aquifer. The recharge area is widely used for intensive row-crop farming including the use of insecticides and herbicides. Small concentrations of insecticides have been detected in water from a few wells developed in the Upper Floridan aquifer in southern Houston County. Therefore, the recharge area for the Upper Floridan aquifer is considered to be highly susceptible to contamination from the surface.

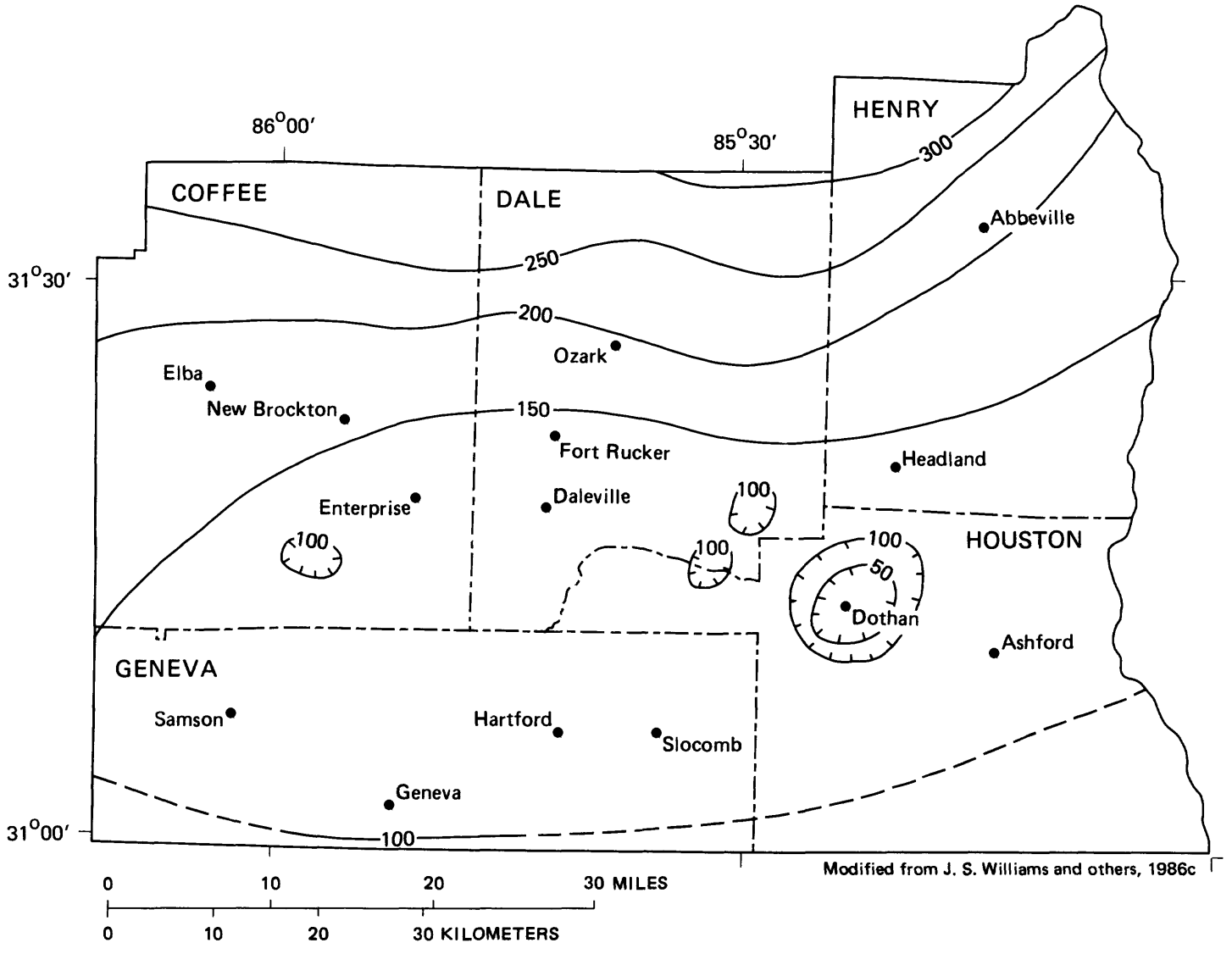
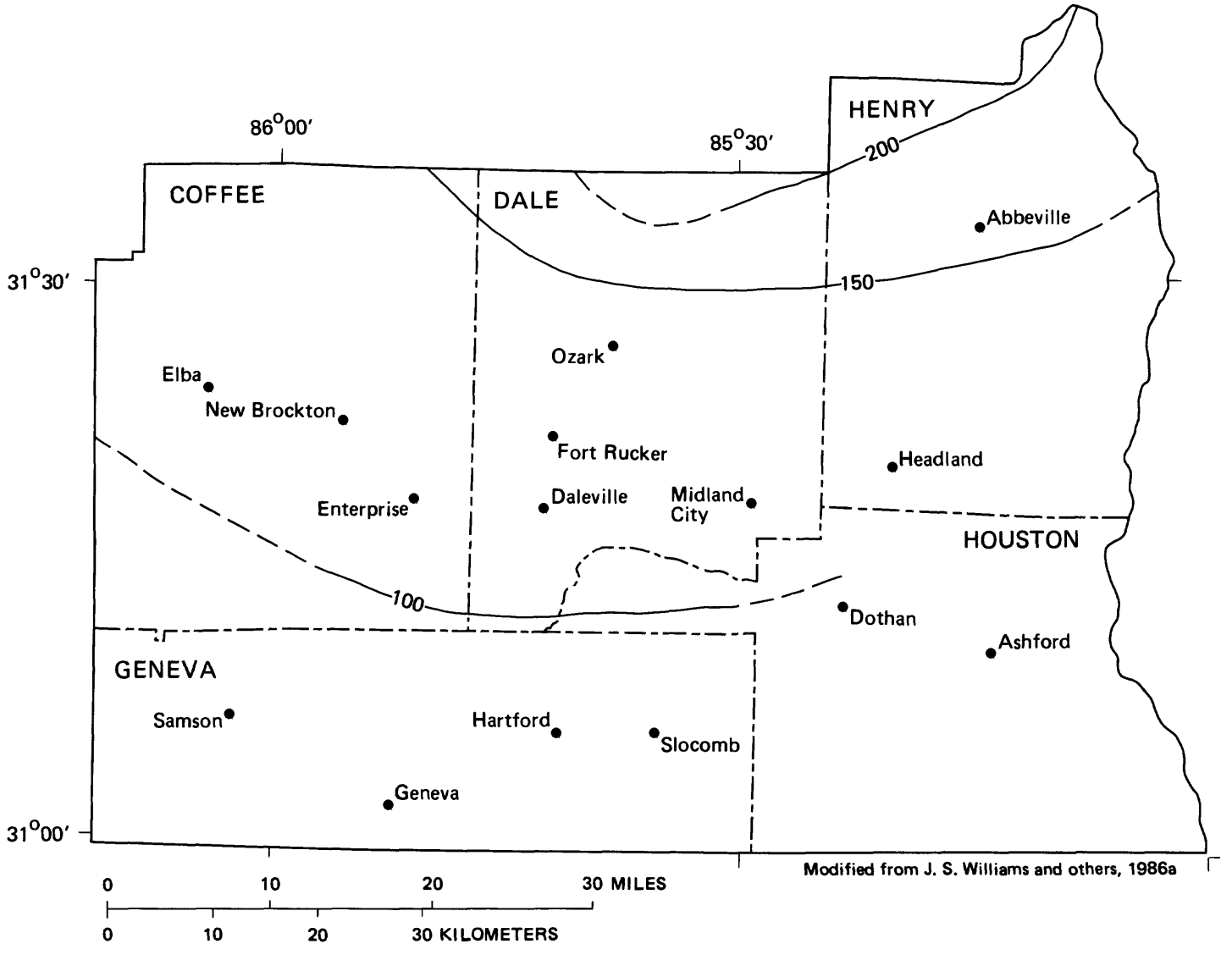


Figure 4.--Configuration of the potentiometric surface in the Nanafalia-Clayton aquifer, fall 1982.



EXPLANATION

—100— — POTENTIOMETRIC SURFACE CONTOUR — Shows altitude at which water level would have stood in tightly cased wells. Dashed where approximately located. Contour interval 50 feet. Datum is sea level

Figure 5.--Configuration of the potentiometric surface in the Providence-Ripley aquifer, fall 1982.

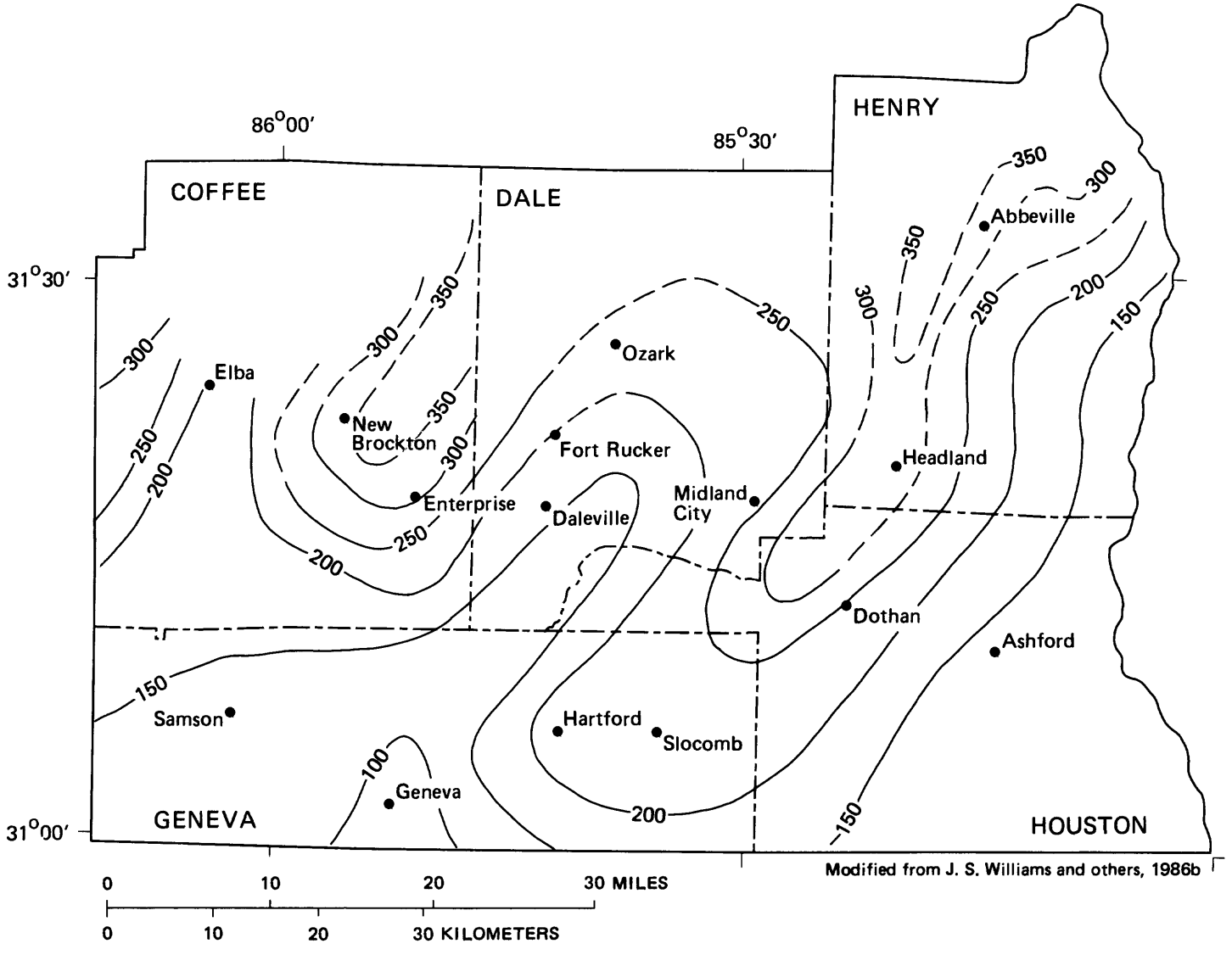


Figure 6.--Configuration of the potentiometric surface in the Lisbon aquifer, fall 1982.

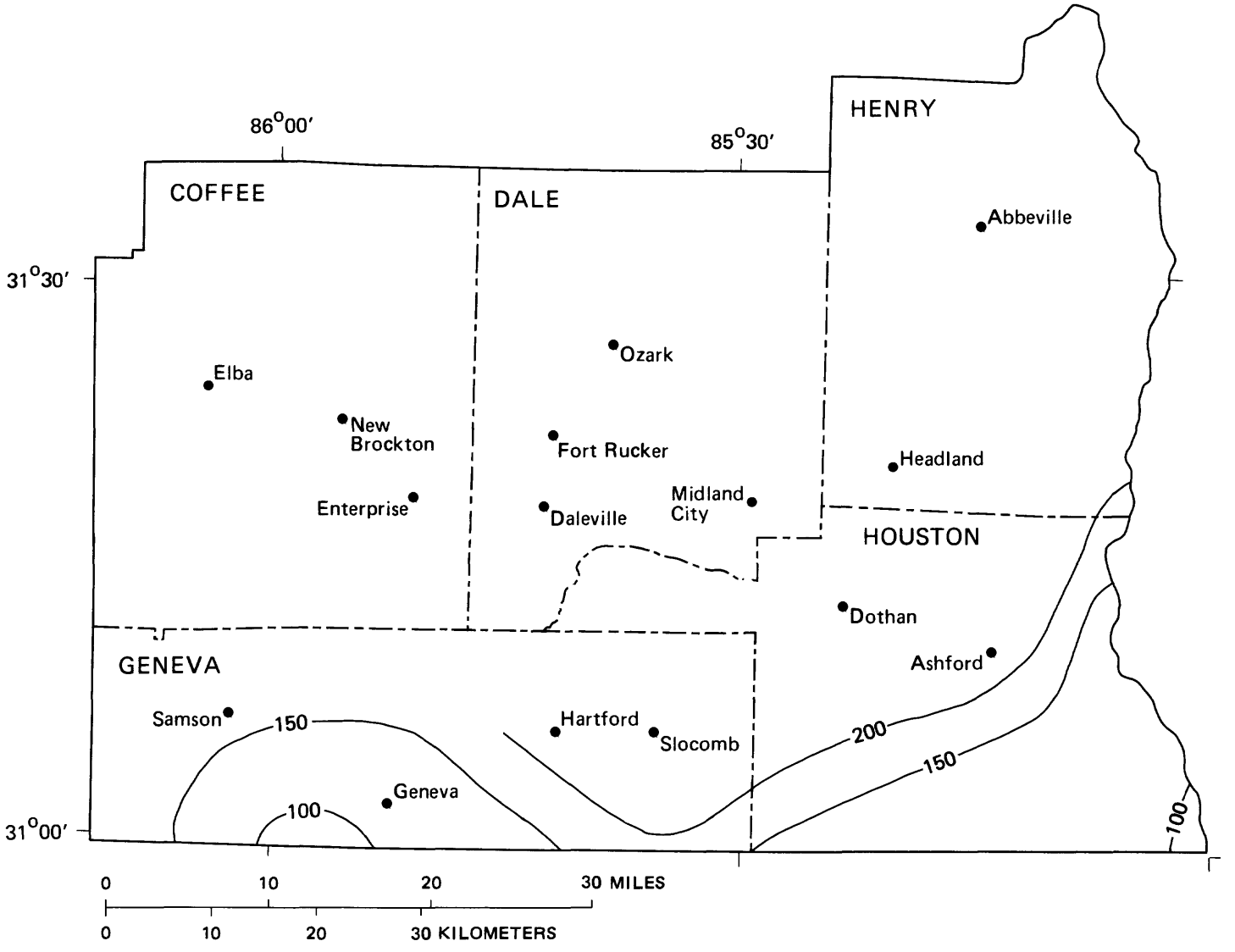


Figure 7.--Configuration of the potentiometric surface in the Floridan aquifer, fall 1986.

SUMMARY AND CONCLUSIONS

The major aquifers in Area 12 in southeast Alabama are the Upper Floridan, Lisbon, Nanafalia-Clayton, and Providence-Ripley aquifers. The Upper Floridan aquifer consists mainly of the Ocala Limestone. The Lisbon aquifer consists of sand beds in the Lisbon, Tallahatta, and Hatchetigbee Formations. The Nanafalia-Clayton aquifer consists of the basal part of the Tuscahoma Sand, sand beds in the Nanafalia Formation, and sand and limestone beds in the Clayton Formation. The Providence-Ripley aquifer consists of sand beds in the Providence and Ripley Formations. Water in the Upper Floridan aquifer generally is unconfined; water in the other major aquifers is confined.

The Nanafalia-Clayton aquifer is the most widely-used aquifer in Area 12 for public water supplies. The Providence-Ripley aquifer is used in northern and central parts of the study area, and the Upper Floridan and Lisbon aquifers are used in the southern part. Maximum withdrawals for public water supplies from all the major aquifers are estimated to be about 42 Mgal/d. Maximum withdrawals for irrigation are estimated to be 15 to 20 Mgal/d, and withdrawals for self-supplied industrial and domestic uses are estimated to be 3 Mgal/d and 2.5 Mgal/d, respectively.

Long-term withdrawals of water from the Nanafalia-Clayton aquifer have resulted in significant declines in the potentiometric surface during the past 40 years in the vicinities of Dothan, Fort Rucker, and Enterprise. The potentiometric surface has declined more than 100 feet at Dothan and 50 to 60 feet at Fort Rucker and Enterprise. The potentiometric maps for the Upper Floridan, Lisbon, and Providence-Ripley aquifers do not show significant declines in the potentiometric surfaces of these aquifers.

All of the recharge areas of the major aquifers are susceptible to contamination. However, because the recharge areas for the Providence-Ripley, Nanafalia-Clayton, and Lisbon aquifers are remote from their areas of use in Area 12, the probability of contamination is low. A zone of clay between the Lisbon aquifer and the Nanafalia-Clayton aquifer should prevent significant leakage from the Lisbon aquifer to the Nanafalia-Clayton aquifer. The recharge area for the Floridan aquifer generally coincides with its area of use in the study area, and consists of a relatively-flat sandy landscape that is used for row-crop farming. Because of the highly-permeable nature of the recharge area and the extensive use of insecticides and herbicides used in the farming operations, the Floridan aquifer is highly susceptible to contamination.

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Table 1--Generalized section of geologic formations in the study area and their water-bearing properties

System	Series	Stratigraphic unit		Thickness (feet)	Lithology		Water-bearing properties
Quaternary	Holocene and Pleistocene	Alluvium and Terrace Deposits		10-40	Silty clay, silt, sand and gravel		Deposits generally do not have sufficient thickness to be a major aquifer. In some areas wells would probably produce 100 gal/min (gallons per minute).
Tertiary	Miocene, Oligocene, and Eocene	Residuum		5-100	Jumbled beds of clay, gravel, sand, and chert boulders		Not a major aquifer. May yield 10 gal/min in places.
	Eocene	Jackson Group	Ocala Limestone and Moodys Branch Formation undifferentiated	10-140	Basal bed of fossiliferous glauconitic sand overlain by calcareous clay overlain by soft coquinoidal limestone	Floridan aquifer	Major aquifer only in southernmost parts of the study area. Used in conjunction with Lisbon-Tallahatta aquifer in southern Houston County. Irrigation wells in Ocala aquifer produce as much as 1,000 gal/min.
		Claiborne Group	Lisbon and Tallahatta Formations undifferentiated	50-250	Glauconitic sand, calcareous clay, and thin beds of siltstone and calcareous sandstone overlain by massive sand, sandy clay, and sandy limestone	Lisbon aquifer	Major aquifer in the southern part of the study area. Wells screened in both formations commonly produce 500 gal/min. Capable of producing 800 gal/min when developed in conjunction with the Upper Floridan aquifer.
	Paleocene	Wilcox Group	Hatchetigbee Formation and Tuscahoma Sand	100-250	Basal zone of glauconitic sand; upper zone of laminated to thin bedded carbonaceous clay and micaceous silty sand; overlain by fossiliferous glauconitic silty sand overlain by thin bedded to massive carbonaceous clay	Tuscahoma cu 2/	Not a major aquifer in the study area. Basal sand of the Tuscahoma commonly screened in conjunction with the underlying Nanafalia and Clayton aquifers.
			Nanafalia Formation	75-200	Basal gravelly sand, middle fossiliferous glauconitic sand zone, and upper zone of calcareous clay, calcareous claystone, siltstone, and sandstone.	Nanafalia/Clayton aquifer	A major aquifer in most parts of the study area. Wells screened in the Nanafalia and underlying Clayton and the overlying Tuscahoma commonly produce 500 gal/min. A well screened solely in the Nanafalia produced 600 gal/min with 31 ft of drawdown in 1964.
		Midway Group	Clayton Formation 1/	100-300	Sand interbedded with calcareous sandstone beds overlain by massive to sandy limestone and calcareous clay		Major source of water in the northern part of the study area. Wells screened solely in the Clayton produce as much as 500 gal/min and wells screened in conjunction with other aquifers produce as much as 1,200 gal/min.
Cretaceous	Upper Cretaceous	Selma Group	Providence Sand 1/	150-250	Clay	cu	Major aquifer in northern counties of the study area. When used in conjunction with other aquifers capable of producing 1,200 gal/min. Wells screened solely in the Providence capable of producing as much as 400 gal/min.
					Sand, sandy clay and calcareous sandstone	Providence/Ripley aquifer	
			Ripley Formation 1/	400-500	Marine sand, calcareous clay, calcareous sandstone and sandy limestone		Potential major aquifer in the northern part of the study area. The unit is developed in conjunction with the overlying Providence Sand in the southern part of the study area.

1/ Crops out to the north of the study area.
2/ Confining unit.

Table 2.--Records of public water-supply wells in the study area

Note: Well numbers correspond to those shown on plate 1.

Geographic coordinate number: Lat (DDMMSS) Long (DDMMSS) sequential number (xx).

Depth of well and water level: Depth of well given in feet; reported water levels are in feet above (-) or below land surface; measured water levels are in feet and tenths.

Well Diameter: casing and screen diameter in inches.

Water-bearing unit: Kr, Ripley Formation; Kp, Providence Sand; Tc, Clayton Formation; Tnf, Nanafalia Formation; Ttu, Tuscahoma Sand; Th, Hatchetigbee Formation; Tt, Tallahatta Formation; Tth, Tallahatta and Hatchetigbee Formations undifferentiated; Ti, Lisbon Formation; Tj, Jackson Group undifferentiated; To, Ocala Limestone.

Altitude of land surface: Altitudes given in feet above sea level from topographic map or determined by anerold barometer; altitudes given in feet and tenths determined by instrumental leveling.

Method of Lift: N, none; S, submergible; T, turbine; F, flows.

Use of Well: I, industrial; D, observation well; P, public water supply; U, unused; T, test.

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
1	313713085094201	Henry Co. Water Authority	Smith Well and Supply Co. 1982	675	12 8 6	Kp	495	325 325.8 328.2 330.6	1982 11/14/84 5-01-85 4-16-87	T	P	Well No. 2. Casing: 12 in. from surface to 580 ft; 6 in. from 540 to 590 ft, 610 to 630 ft, 650 to 655 ft, and 675 to 690 ft. Screen: 6 in. from 590 to 610 ft, 630 to 650 ft, and 655 to 675 ft. Reported drawdown 109 ft after pumping 24 hrs at 434 gal/min in 1982. F-6.
2	313410085060601	Shorter-ville	Byrd Bule 1963	460	6	Tc	415	---	---	S	P	Well No. 1. Casing: 6 in. to rock at unreported depth; open hole below. Drawdown 12 ft when pumped at 100 gal/min when drilled. Well is not presently in use.
3	313413085145501	Abbe-ville	Layne Central 1950	475	18 8	Tc	430	176 179.5 196.2 206.5 194.6 199.8 194.9 201.4 198.4 209.7 203.1	1950 1-21-65 6-29-82 11-18-82 11-09-83 11-14-84 5-02-85 11-01-85 5-02-86 10-24-86 4-16-87	T	P	Abbeville No. 2. Casing: 18 in. from surface to 350 ft; 8 in. from 300 to 395 ft. Screen: 8 in. from 395 to 475 ft. Drawdown 27 ft when pumped 8 hrs at 372 gal/min in 1950. J-7.
4	313421085152701	Abbe-ville	Layne Central 1965	470	18 8	Tc Kp	434	166 200	10-05-65 8-24-82	T	P	Abbeville No. 4. Casing: 18 in. from surface to 385 ft; 8 in. from 335 to 390 ft. Screen: 8 in. from 390 to 470 ft. Drawdown 20 ft when pumped at 350 gal/min in 1965.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
5	313428085170601	Abbeville	Layne Central 1976	680	18 10	Kp	457	267 290	3-04-76 8-13-82	T	P	Abbeville No. 5. Casing: 18 in. from surface to 600 ft; 10 in. from 540 to 605 ft and 680 to 690 ft. Screen: 10 in. from 605 to 680 ft. Drawdown 116 ft after 2.5 hrs pumping 402 gal/min 3-04-76.
6	313303085172401	Abbeville	Layne Central 1952	545	18 8	Tc	450	192.0 202 213.9 210.3 212.1 207.7 207.5 210.0 207.8	11-02-52 7-21-82 11-08-83 11-14-84 5-02-85 11-01-85 5-02-86 10-24-86 4-16-87	T	P	Abbeville No. 3. Casing: 18 in. from surface to 425 ft; 8 in. from 365 to 430 ft. Screen: 8 in. from 430 to 545 ft. Reported ft. Reported drawdown 30 ft after 8 hrs pumping 351 gal/min in 1952. K-5.
7	313311085263201	Dale Co. Water Authority	Smith Well and Supply Co. 1982	725	12 6	Kp kr	484	315 325	6/1982 11-01-82	T	P	Well No. 1. Casing: 12 in. from surface to 550 ft and 6 in. from 510 to 570 ft. Screen: 6 in. from 570 to 590 ft, 650 to 670 ft, and 705 to 725 ft. Reported drawdown 109 ft after 24 hrs pumping 450 gal/min 11-01-82. Electric logs available in files of the USGS. A-4.
8	313557085423001	Ariton	Layne Central 1974	440	16 8	Tc Kp	520	179 235 237 235.2	1-03-75 6-12-81 2-08-82 11-15-82	T	P	Ariton No. 3. Casing: 16 in. from surface to 330 ft; 8 in. from 270 to 335 ft and 385 to 410 ft. Screen: 8 in. from 335 to 385 ft and 410 to 440 ft. Reported drawdown 53 ft after 14 hrs pumping 201 gal/min 1-03-75. D-17.
9	313556085430801	Ariton	Gray Artesian Well Co. 1946	668	8	Tc Kp Kr	479	189	1946	T	P	Ariton No. 1. Casing: 8 in. from surface to 272 ft; none below. Reported drawdown 12 ft after 8 hrs pumping 90 gal/min in 1946. D-7.
10	313608085432101	Ariton	Alton Powell 1959	364	6	Tc Kp	434	155 155.6 148.6 149.5 150.2 151.4 158.3	10-19-59 2-08-82 6-28-82 10-30-84 4-22-85 10-21-86 4-01-87	S	P	Ariton No. 2. Casing: 6 in. from surface to 223 ft; none below. Reported drawdown 19 ft after 1.5 hrs pumping 70 gal/min 10-19-59. D-5.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
11	313307085521701	New Hope	English Well and Supply Co. 1974	242	6 3	Tc	350	95 93.8 92.5 91.0 92.8 92.2 93.7 92.2 95.2 93.0	3-30-74 11-15-82 11-01-83 5-09-84 10-31-84 4-25-85 10-28-85 4-17-86 10-22-86 4-01-87	S	P	New Hope No. 1. Casing: 6 in. from surface to 238 ft; none below. Reported drawdown 7 ft after 48 hrs pumping 170 gal/min 3-30-74. A-9.
12	313422086000501	Jack	Alton Powell 1972	310	6	Tc	245	151	1972	S	P	Jack No. 1. Casing: 6 in. from surface to 238 ft; none below. Reported drawdown 9 hrs after 8 hrs pumping 30 gal/min in 1972.
13	312759085503401	Fort Rucker Military Reservation	Hughes and Son 1981	460	4	Tc	463	260.5 260.8	12-02-81 11-11-82	S	P	Tabernacle Field. Casing: 4 in. from surface to 426 ft; open hole below. Reported drawdown 25.5 ft after 48 hrs pumping 30 gal/min 11-19-81.
14	312857085470101	Fort Rucker Military Reservation	Hughes and Son 1981	420	4	Tc	470	260.6 260.0 258.6	12-01-81 10-21-86 3-31-87	S	P	Longstreet Field. Casing: 4 in. from surface to 466 ft; open hole below. Reported drawdown 13.9 ft after 49 hrs pumping 30 gal/min 11-19-81. E-12.
15	312959085392501	Ozark	Layne Central 1972	775	18 10	Kr	443	298.9	12-01-81	T	P	Ozark No. 5. Casing: 18 in. from surface to 650 ft; 10 in. from 570 to 655 ft and 675 to 695 ft. Screen: 10 in. from 655 to 675 ft and 695 to 775 ft. Reported drawdown 74 ft after pumping 24 hrs at 754 gal/min in 1972. F-20.
16	312719085384301	Ozark	Layne Central 1946	845	16 8	Kr	442	210 247.4 298.0 305.7 309.8 307.8 310.9 315.0 318.3 318.0	1946 7-13-65 12-10-81 10-31-83 11-01-84 4-24-85 10-23-85 4-16-86 10-21-86 3-31-87	N	O	Ozark No. 1. Casing: 16 in. from surface to 420 ft; 8 in. from surface to 805 ft. Screen: 8 in. from 805 to 845 ft. Reported drawdown 10 ft when pumped at 197 gal/min in 1946. F-16.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
17	312714085380801	Ozark	Layne Central 1954	813	24 16 10	Kr	403	187 237.6 284.9 292.2 287.4	1954 7-13-65 12-08-81 10-21-86 3-31-87	T	P	Ozark No. 2. Casing: 16 in. from surface to 750 ft; 10 in. from 665 to 753 ft. Screen: 10 in. from 753 to 813 ft. Reported drawdown 47 ft when pumped at 735 gal/min in 1954. F-17.
18	312639085361601	Ozark	Layne Central 1967	815	18 10	Kr	490	267.5	12-07-81	T	P	Ozark No. 4. Casing: 18 in. from surface to 750 ft; 10 in. from 670 to 755 ft. Screen: 10 in. from 755 to 815 ft. Reported drawdown 89 ft after 24 hrs pumping 750 gal/min in 1968. F-19.
19	312733085123801	Henry Co. Water Authority	Layne Central 1983	690	12 6	Kp Kr	200	43	8-30-83	T	P	Tumbleton Well. Casing: 12 in. from surface to 625 ft; 6 in. from 575 to 630 ft. Screen: 6 in. from 630 to 690 ft. Reported drawdown 47 ft when pumped 24 hrs at 578 gal/min 8-30-83. In test well, water from Clayton aquifer contained excessive iron.
20	312424085081601	Hale-burg	Acme Drilling Co. 1975	669	6 2.5	Tc	325	133.3	11-18-82	S	P	Haleburg No. 1. Casing: 6 in. from surface to 550 ft; 2.5 in. from 513 to 638 ft. Screen: 2.5 in. from 638 to 669 ft. Reported drawdown 57 ft when pumped 7.5 hrs at 100 gal/min in 1975. S-5.
21	312129085195801	Head-land	Alton Powell 1985	668	12 6	Tc Kp	360	235	6-24-85	T	P	Headland No. 3. Casing: 12 in. from surface to 474 ft; 6 in. from 444 to 480 ft, 500 to 538 ft, 599 to 648 ft, and 668 to 773 ft. Screen: 6 in. from 538 to 599 ft and 648 to 688 ft. Reported drawdown 88 ft after 48 hrs pumping 656 gal/min 6-24-85

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
22	312534085203401	Newville	Tom Smith Artesian Well Co. 1974	420 8 4		Tnf	394	165 226.8	1-23-74 2-17-82	T	P	Newville No. 2. Casing: 8 in. from surface to 370 ft; 4 in. from 310 to 378 ft. Screen: 4 in. from 370 to 420 ft. Reported drawdown 86 ft after 24 hrs pumping 210 gal/min 1-23-74.
23	312517085201801	Newville	------ 1912	335	6	Ttu	393	180	1947	T	P	Newville No. 3. Casing: 6 in. from surface to 315 ft. Pumped at 75 gal/min in 1964 with 30 ft of drawdown. U-3.
24	312453085274801	Fort Rucker Military Reservation	Carroll Hardware 1969	365 4 2		Tnf	356	178.0 152.5	12-01-81 6-29-82	S	P	Goldberg Field 2. Casing: 4 in. from surface to 214 ft. Reported to pump 14 gal/min. I-12.
25	312451085275001	Fort Rucker Military Reservation	Bule Drilling Co. 1976	303	8	Ttu Tnf	355	152 144 174 166.0	6-14-76 12-01-81 6-29-82 11-16-82	S	P	Goldberg Field 3. Casing: 8 in. from surface to 238 ft; none below. Reported drawdown 29 ft when pumped at 39 gal/min 6-14-76. I-11.
26	312239085344901	Fort Rucker Military Reservation	Smith Well and Supply Co. 1980	453 6 4		Tc	245	90.5 99.9 98.5	10-15-80 12-04-84 2-06-85	N	O	Obs. Well Dle-1. Casing: 6 in. from surface to 210 ft; 4 in. from 192 to 433 ft and 453 to 474 ft. Screen: 4 in. from 433 to to 453 ft. Recording observation well since October 1978. J-12.
27	312240085344801	Fort Rucker Military Reservation	Smith Well and Supply Co.	---	---	Tc	247	80 94.9	6-14-78 12-01-81	S	P	Hunt Field Well. Well construction not determined. Drawdown 13 ft when pumped 36 hrs at 50 gal/min in June 1978.
28	312318085350201	Alabama Highway Dept.	Alabama Highway Dept.	270 4 3		Ttu	335	161.3 170.4	3-18-75 6-07-83	S	P	Rest area well. Casing: 4 in. from surface to 230 ft. Screen: 3 in. from 230 to 270 ft. Drawdown 12.6 ft when pumped 18 hrs at 27 gal/min in 1975. J-13.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
29	312439085383101	Ozark	Layne Central 1978	880	30 20 10	Kr	340	185 220	3-29-78 12-03-81	T	P	Ozark Well No. 6. Casing: 30 in. from surface to 14 ft; 20 in. from surface to 765 ft; 10 in. from 700 to 770 ft. Screen: 10 in. from 770 to 880 ft. Reported drawdown 200 ft after pumping 24 hrs at 709 gal/min 3-29-78. K-10.
30	312600085401101	Ozark	Layne Central 1962	900	24 18 10	Kr	430	235 248.3 309.0	3-14-62 7-13-65 12-04-81	T	P	Ozark Well No. 3. Casing: 24 in. from surface to 45 ft; 18 in. from surface to 832 ft; 10 in. from 752 to 840 ft. Screen: 10 in. from 840 to 900 ft. Reported drawdown 48 ft when pumped at 681 gal/min. K-1.
31	312351085424601	Fort Rucker Military Reservation	Alsay Pippin Inc. 1983	425	6 4	Tc Kp	235	74	1983	S	P	Lake Lodge Well. Casing: 6 in. from surface to 395 ft. Screen: 4 in. from 395 to 425 ft. Drawdown 58 ft when pumped 21 hrs at 80 gal/min in 1983. L-7.
32	312428085425701	Fort Rucker Military Reservation	Carroll Hardware	----	---	Ttu	224	50.5	12-03-81	S	P	Engineer Beach Well construction not determined. L-9.
33	312409085431701	Fort Rucker Military Reservation	----	----	---	---	---	----	----	S	P	Girl Scouts Camp. Well construction not determined.
34	31235708543260	Fort Rucker Military Reservation	Carroll Hardware 1975	215	4	Tnf	241	53.5 53.8 56.6 54.2	11-19-81 6-29-82 10-21-86 3-31-87	S	P	Enlisted Men's Bch. Casing: 4 in. from surface to 200 ft. Screen: 3 in. from 200 to 215 ft. L-6.
35	312328085433401	Fort Rucker Military Reservation	Carroll Hardware 1977	257	4 3	Tnf	215	37 59.2	3-02-77 11-19-81	S	P	Wildlife area. Casing: 4 in. from surface to 199 ft. 3 in. from 195 to 237 ft. Screen: 3 in. from 237 to 257 ft. L-5.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
36	312138085431001	Fort Rucker Military Reservation	Layne Central 1979	650	24 16	Tc Kp	281	136 140.9 137.8	4-07-79 11-19-81 6-29-82	T	P	Fort Rucker No. 7. Casing: 30 in. from surface to 57 ft; 24 in. from surface to 375 ft; 16 in. from 300 to 380 ft and 510 to 540 ft. Screen: 16 in. from 380 to 510 ft and 540 to 650 ft. Drawdown 90 ft when pumped 24 hrs at 743 gal/min 4-07-79.
37	312132085450801	Fort Rucker Military Reservation	Layne Central 1956	682	16 8	Tc	290	169.5	11-19-81	T	P	Lowe Field. Casing: 16 in. from surface to 370 ft; 8 in. from 310 to 375 ft, 380 to 554 ft, 574 to 600 ft, and 615 to 662 ft. Screen: 8 in. from 375 to 380 ft, 554 to 574 ft, 600 to 615 ft, and 662 to 682 ft. Reported drawdown 82 ft after pumping 402 gal/min 8-28-56. L-4.
38	312207085444901	Ala. National Guard	Smith Well and Supply Co. 1977	315	12 6	Ttu Tnf	293	124.0	2-16-77	T	P	Well No. 1. Casing: 12 in. from surface to 170 ft; 6 in. from 145 to 200 ft. Screen: 6 in. from 200 to 305 ft. Reported drawdown 37.5 ft after 4 hrs pumping 250 gal/min 2-16-77. L-11.
39	312534085470401	Fort Rucker Military Reservation	Smith Well and Supply Co. 1984	600	6 4	Tnf Tc Kp	415	218	7-23-84	S	P	Range Headquarters. Casing: 6 in. from surface to 500 ft; 4 in. from 474 to 516 ft and 526 to 610 ft. Screen: 4 in. from 516 to 526 ft and 610 to 630 ft. Drawdown 10 ft when pumped 20 hrs at 50 gal/min 7-23-84.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level Above (-) or below land surface	Water level Date of measurement	Method of lift	Use of well	Remarks
40	312203085510301	Fort Rucker Military Reservation	Acme Drilling Co. 1961	640	7	Tc Kp	395	243	11-20-81	T	P	Shell Field Well. Casing: 8 in. from surface to 540 ft; none below. Reported drawdown 27.3 ft after 8 hrs pumping 465 gal/min 3-29-61. Electric logs available in the files of USGS. I-3.
41	312126085520101	Enter-prise	Carloss Well Drilling Co. 1970	748	24 10	Tc Kp	418	266	1970	T	P	Enterprise No. 6. Casing: 24 in. from surface to 520 ft; 10 in. from 448 to 620 ft, 664 to 680 ft, 700 to 705 ft, and 725 to 732 ft. Screen: 10 in. from 620 to 664 ft, 680 to 700 ft, 705 to 725 ft, and 732 to 748 ft. I-
42	312331085553401	New Brockton	Layne Central 1977	645	16	Tc	447	226 271 296.9 275.4 288.3 298.2 296.0 294.8 288.3	6-16-78 1-07-82 11-11-82 5-11-84 11-09-84 4-28-85 11-29-85 4-17-86 4-01-87	T	P	New Brockton No. 3. Casing: 16 in. from surface to 527 ft; none below. Reported drawdown 60 ft after 24 hrs pumping 293 gal/min 6-16-78. J-6.
43	312309085554301	New Brockton	Layne Central 1941	358	12 8	Ttu Tnf	455	242	1941	T	P	New Brockton No. 1. Casing: 12 in. from surface to 299 ft. Screen: 8 in. from 299 to 358 ft. Pumped at 100 gal/min in 1941. Presently used for emergencies only. J-4.
44	312302085555901	New Brockton	Layne Central 1962	534	12 6	Tc	445	241	6-15-62	T	P	New Brockton No. 2. Casing: 12 in. from surface to 483 ft; 6 in. from 423 to 488 ft, 498 to 506 ft, and 516 to 524 ft. Screen: 6 in. from 488 to 498 ft, 506 to 516 ft, and 524 to 534 ft. Drawdown 15 ft when pumped 8 hrs in 1962. J-5.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level Above (-) or below land surface	Water level Date of measurement	Method of lift	Use of well	Remarks
45	312447086034301	Elba	Layne Central 1961	585	18 10	Tc Kp	192	- 16 2.1 4.8 5.6 7.2 11.2 8.3	1961 11-12-82 11-09-84 4-24-85 10-29-85 10-23-86 4-01-87	F,T	P	Elba No. 2. Casing: 18 in. from surface to 365 ft; 10 in. from surface to 355 ft, 365 to 385 ft, 395 to 415 ft, 425 to 441 ft, 451 to 530 ft, and 550 to 565 ft. Screen: 10 in. from 355 to 365 ft, 385 to 395 ft, 415 to 425 ft, 441 to 451 ft, 530 to 550 ft, and 565 to 585 ft. Drawdown 84 ft after pumping 8 hrs at 503 gal/min in 1962. K-4.
46	312504086044801	Elba	Layne Central 1952	540	16 10	Tc	195	17	1962	T	P	Elba No. 1. Casing: 16 in. from surface to 300 ft; 10 in. from 240 to 308 ft, 348 to 426 ft, and 446 to 514 ft. Screen: 10 in. from 308 to 348 ft, 426 to 446 ft, and 514 to 540 ft. Drawdown 65 ft after pumping 8 hrs at 506 gal/min in 1952. K-3.
47	31262708604510	Elba	Alton Powell 1972	463	12 8 6	Tc	312	106	4-30-78	T	P	Elba No. 3. Casing: 12 in. from surface to 354 ft; 8 in. from 318 to 348 ft; 6 in. from 369 to 372 ft and 398 to 410 ft. Screen: 6 in. from 349 to 369 ft, 372 to 398 ft, and 410 to 463 ft. Drawdown 146 ft when pumped 24 hrs at 525 gal/min. K-7.
48	312430086094601	Curtis	Acme Drilling Co. 1967	800	6	Tc	453	255.0	11-02-82	T	P	Curtis No. 1. Casing: 6 in. from surface to 599 ft. Open hole below. Drawdown 16 ft when pumped 7 hrs at 151 gal/min 6-19-67. L-9.
49	311949086011101	Damascus	English Well Drilling	692	6	Tc	363	170 211	12-06-67 4-06-83	S	P	Damascus No. 1. Casing: 6 in. from surface to 627 ft; open hole below. Drawdown 55 ft after 8 hrs pumping at 110 gal/min. N-8.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
50	311644085592501	Goodman	Acme Drilling Co., Inc. 1977	783	8 6 4	Tc	345	202 224 190.1 238	8-29-77 7-28-82 11-12-82 11-09-84	T	P	Goodman No. 1. Casing: 8 in. from surface to 682 ft; 6 in. from 654 to 740 ft. Screen: 6 in. from 740 to 783 ft. Reported drawdown 59 ft after 12 hrs pumping at 240 gal/min 8-29-77. O-9.
51	311930085533401	Enterprise	Layne Central 1981	860	24 16 10	Tc Kp	406	272.0 269.4 273.2	10-01-81 4-22-82 11-11-82	T	P	Enterprise No. 8. Casing: 24 in. from surface to 630 ft; 16 in. from 570 to 635 ft. Screen: 10 in. from 635 to 765 ft and 795 to 860 ft. Reported drawdown 97 ft after 4 hrs pumping 754 gal/min 10-01-81.
52	311908085513001	Enterprise	Gray Artesian Well Co. 1934	606	20 12	Tnf Tc	364	243.6	12-14-81	T	P	Enterprise No. 2. Casing: 20 in. from surface to 94 ft; 12 in. from surface to 425 ft; none below. Drawdown 75 ft when pumped 8 hrs at 600 gal/min in 1934. P-3.
53	311844085511201	Enterprise	Layne Central 1943	770	24 10	Ttu Tnf Tc Kp	362	163 217.7 226.4	1944 1-04-82 6-11-82	N	P	Enterprise No. 1. Casing: 18 in. from surface to 310 ft; 10 in. from 280 to 343 ft, 398 to 412 ft, 432 to 485 ft, 505 to 519 ft, 544 to 690 ft, and 710 to 745 ft. Screen: 10 in. from 343 to 398 ft, 412 to 432 ft, 485 to 505 ft, 519 to 544 ft, and 690 to 710 ft. Reported drawdown 13 ft after 8 hrs pumping 280 gal/min in 1944. P-4. COF-1 observation well.
54	311843085511101	Enterprise	Layne Central 1959	765	24 10	Ttu Tnf Tc Kp	360	180 239.2 228.0	1959 12-04-81 6-11-82	T	P	Enterprise No. 3. Casing: 24 in. from surface to 405 ft; 10 in. from 347 to 410 ft, 430 to 482 ft, 502 to 515 ft, 535 to 680 ft, and 700 to 745 ft. Screen: 10 in. from 410 to 430 ft, 482 to 502 ft, 515 to 535 ft, 680 to 700 ft, and 745 to 765 ft. Reported drawdown 94 ft after 8 hrs pumping 752 gal/min in 1959. P-5.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
55	312005085510401	Enterprise	Layne Central 1961	750	24 10	Tnf Tc Kp	380	200 246.7 250.5	6-01-61 12-14-81 11-11-82	T	P	Enterprise No. 4. Casing: 24 in. from surface to 460 ft; 10 in. from surface to 465 ft, 475 to 495 ft, 515 to 535 ft, 545 to 567 ft, 577 to 598 ft, 608 to 630 ft, 640 to 670 ft, 680 to 700 ft, and 710 to 740 ft. Screen: from 460 to 475 ft, 495 to 515 ft, 535 to 545 ft, 567 to 577 ft, 598 to 608 ft, 630 to 640 ft, 670 to 680 ft, 700 to 710 ft, and 740 to 750 ft. Reported drawdown 66 ft after pumping 8 hrs at 650 gal/min 6-01-61. P-1.
56	311900085500001	Enterprise	Layne Central 1967	772	24 10	Tnf Tc Kp	382	220 249.6	11-03-67 12-14-81	T	P	Enterprise No. 5. Casing: 24 in. from surface to 480 ft; 10 in. from 428 to 485 ft, 495 to 505 ft, 515 to 625 ft, 645 to 682 ft, 692 to 702 ft, and 712 to 732 ft. Screen: 10 in. from 485 to 495 ft, 505 to 515 ft, 625 to 645 ft, 682 to 692 ft, 702 to 712 ft, and 732 to 772 ft. Reported drawdown 60 ft after 12 hrs pumping 752 gal/min 11-03-67.
57	311936085490101	Enterprise	Layne Central 1979	755	24 10	Tc Kp	360	220 224.1 229.1	1-09-79 12-15-81 7-01-82	T	P	Enterprise Well 7. Casing: 24 in. from surface to 560 ft; 10 in. from 485 to 565 ft, 585 to 595 ft, 610 to 620 ft, 630 to 640 ft, 665 to 675 ft, and 695 to 713 ft. Screen: 10 in. from 565 to 585 ft, 595 to 610 ft, 620 to 630 ft, 640 to 665 ft, 675 to 695 ft, and 713 to 753 ft. Reported drawdown 141 ft after pumping 5 hrs at 824 gal/min 1-09-79.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
58	311703085470201	Level Plains	Weldon Drilling Co.	440	8	Ttu Tnf	341	204 224	6-03-81 12-15-81	S	P	Level Plains Well 2. Casing: 8 in. from surface to 380 ft. Screen from 380 to 440 ft. Reported drawdown 30 ft after 29 hrs pumping at 150 gal/min 6-30-81. M-17.
59	311804085463001	Level Plains	Tom Smith Artesian Well Co. 1969	----	----	Tc	318	174.9 243.0 202.9	10-07-69 12-15-81 11-17-82	S	P	Level Plains Well 1. Casing: 8 in. from surface to 560 ft; open hole below. Reported drawdown 79 ft after 24 hrs pumping 82 gal/min 10-07-69. M-16.
60	312033085461601	Macedonia Water System	Layne Central 1982	710	12 6	Tc Kp	363	216 218	11-24-81 2-03-82	T	P	Macedonia Well 1. Casing: 12 in. from surface to 495 ft; 6 in. from 435 to 500 ft, 515 to 535 ft, and 620 to 636 ft. Screen: 6 in. from 500 to 515 ft, 535 to 620 ft, 636 to 641 ft, and 665 to 710 ft. Reported drawdown 109 ft after pumping 457 gal/min 11-24-81. M-22.
61	311918085442401	Fort Rucker Military Reservation	Layne Central 1982	760	18 10	Tc Kp	235	108 108.6 106.9	12-18-81 7-02-82 11-15-82	T	P	Ft. Rucker Well 8. Casing: 18 in. from surface to 535 ft; 10 in. from 475 to 540 ft, 620 to 650 ft, 660 to 710 ft, and 720 to 730 ft. Screen: 10 in. from 540 to 620 ft, 650 to 660 ft, 710 to 720 ft, and 730 to 760 ft. Reported drawdown 45 ft after pumping 503 gal/min 12-18-81. Electric logs available in the files of USGS. M-21.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level Above (-) or below land surface	Water level Date of measurement	Method of lift	Use of well	Remarks
62	312005085435601	Fort Rucker Military Reservation	Layne Central 1942	620	18 10	Ttu Tnf Tc kp	202.6	69 104.1 73.2	9-01-81 11-20-81 6-28-82	T	P	Ft. Rucker Well 1. Casing: 18 in. from surface to 148 ft; 10 in. from 105 to 153 ft, 173 to 179 ft, 219 to 335 ft, 340 to 498 ft, 508 to 513 ft, 528 to 536 ft, and 551 to 610 ft. Screen: 10 in. from 153 to 173 ft, 179 to 219 ft, 335 to 340 ft, 498 to 508 ft, 513 to 528 ft, 536 to 551 ft, and 610 to 620 ft. Reported drawdown 58 ft after 21 hrs pumping 335 gal/min 9-01-81. M-2.
63	312003085432401	Fort Rucker Military Reservation	Layne Central 1942	649	18 10	Ttu Tnf Kp	226.4	35 69 98 103.7 99.1 111.6 104.6	4-07-42 7-04-52 9-01-81 11-20-81 6-28-82 10-21-86 3-31-87	T	P	Fort Rucker Well 2. Casing: 18 in. from surface to 168 ft; 10 in. from 120 to 173 ft, 193 to 203 ft, 223 to 233 ft, 253 to 309 ft, 324 to 528 ft, 543 to 549 ft, and 564 to 639 ft. Screen: 10 in. from 173 to 193 ft, 203 to 223 ft, 233 to 253 ft, 309 to 324 ft, 528 to 543 ft, 549 to 564 ft, and 634 to 649 ft. Reported drawdown 80.5 ft after 36 hrs pumping 810 gal/min 4-07-42; 50.8 ft after 8 hrs pumping 750 gal/min 4-07-52; 26 ft after 16 hrs pumping 324 gal/min 9-01-81. M-3.
64	312008085431001	Fort Rucker Military Reservation	Layne Central 1942	673	18 10	Ttu Tnf Kp	252	58 150.1 124.9	5-01-42 12-01-81 6-28-82	T	P	Ft. Rucker Well 3. Casing: 18 in. from surface to 202 ft; 10 in. from 151 to 207 ft, 257 to 273 ft, 283 to 552 ft, 567 to 571 ft, 586 to 615 ft, and 630 to 663 ft. Screen 10 in. from 207 to 257 ft, 273 to 283 ft, 552 to 567 ft, 571 to 586 ft, 615 to 630 ft, and 663 to 673 ft. Reported drawdown 47 ft after 37.5 hrs pumping 805 gal/min 5-01-42; 19 ft after 13 hrs pumping 271 gal/min 9-01-81. M-5.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
65	312056086422801	Fort Rucker Military Reservation	Alsay-Pippin Inc. 1983	850	16 10	Tnf Tc Kp	270	235	1985	T	P	Ft. Rucker Well 11. Casing: 16 in. from surface to 545 ft; 10 in. from 545 to 560 ft, 620 to 640 ft and 710 to 830 ft. Screen: 10 in. from 560 to 620 ft, 640 to 710 ft, and 830 to 850 ft. Reported drawdown 88 ft after pumping 21 hrs at 754 gal/min in 1983.
66	312009085425801	Fort Rucker Military Reservation	Layne Central 1942	689	18 10	Ttu Tnf Kp	267	160.0	12-01-81	T	P	Ft. Rucker Well 4. Casing: 18 in. from surface to 218 ft; 10 in. from 164 to 219 ft, 239 to 244 ft, 267 to 275 ft, 295 to 566 ft, 581 to 586 ft, and 616 to 679 ft. Screen: 10 in. from 219 to 239 ft, 247 to 267 ft, 275 to 295 ft, 566 to 581 ft, 586 to 616 ft, and 679 to 689 ft. Reported drawdown 18 ft after 7 hrs pumping 380 gal/min 9-01-81. M-6.
67	312009085425501	Fort Rucker Military Reservation	Layne Central 1982	807	18 10	Kp	302	177 174.4 175.3	3-10-82 3-15-82 6-28-82	T	P	Ft. Rucker Well 9. Casing: 18 in. from surface to 585 ft; 10 in. from 525 to 590 ft, 670 to 690 ft, and 720 to 772 ft. Screen: 10 in. from 590 to 670 ft, 690 to 720 ft, and 772 to 807 ft. Reported drawdown 44 ft after pumping 503 gal/min in 1982. Electric logs available in the files of USGS. M-20.
68	311952085431601	Fort Rucker Military Reservation	Layne Central 1942	670	18 10	Ttu Tnf Kp	250.7	60 101.7 117 123.2	1942 7-16-65 7-16-77 12-04-81	N	U	Ft. Rucker Well 5. Casing: 18 in. from surface to 201 ft; 10 in. from 162 to 216 ft, 276 to 552 ft, 567 to 588 ft, and 618 to 660 ft. Screen: 10 in. from 216 to 276 ft, 552 to 567 ft, 588 to 618 ft, and 660 to 670 ft. Reported drawdown 33 ft after 48 hrs pumping 459 gal/min 7-16-77. M-4.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
69	311932085431801	Fort Rucker Military Reservation	Layne Central 1942	775	18 10	Ttu Tnf Tc Kp	355	163 203.1 230 272.3 231	1942 7-65 9-01-81 11-19-81 6-28-82	T	P	Ft. Rucker Well 6. Casing: 18 in. from surface to 330 ft; 10 in. from 281 to 257 ft, 387 to 406 ft, 416 to 511 ft, 531 to 673 ft, 683 to 695 ft, 715 to 731 ft, and 751 to 765 ft. Screen: 10 in. from 357 to 387 ft, 406 to 416 ft, 511 to 531 ft, 673 to 683 ft, 695 to 715 ft, and 731 to 751 ft. Reported drawdown 10 ft after pumping 200 gal/min in 1942; 41 ft after 7 hrs pumping 78 gal/min 9-01-81. M-8.
70	311838085423601	Daleville	Layne Central 1961	700	18 8	Ttu Tnf Tc Kp	333	176.7 217.3	7-17-65 12-14-81	T	P	Daleville Well 1. Casing: 18 in. from surface to 350 ft; 8 in. from 300 to 355 ft, 375 to 464 ft, 474 to 580 ft, 590 to 620 ft, 630 to 640 ft, and 680 to 690 ft. Screen: 8 in. from 335 to 375 ft, 464 to 474 ft, 580 to 590 ft, 620 to 630 ft, 640 to 680 ft, and 690 to 700 ft. Reported drawdown 37 ft after 15 minutes pumping 460 gal/min 7-17-65. M-11.
71	311804085432001	Daleville	Layne Central 1966	707	16 8	Tnf Tc Kp	325	178 203.9 206.0	7-15-66 12-15-81 6-30-82	T	P	Daleville Well 2. Casing: 16 in. from surface to 350 ft; 8 in. from 300 to 355 ft, 395 to 470 ft, 480 to 550 ft, and 590 to 657 ft. Screen: 8 in. from 355 to 395 ft, 470 to 480 ft, 550 to 590 ft, and 657 to 707 ft. Reported drawdown 39 ft after 6 hrs pumping 503 gal/min 7-15-66.
72	311801085423601	Daleville	Alton Powell 1986	700	20 12 10	Tnf Tc Kp	300	---	----	T	P	Daleville Well 3. Casing: 20 in. from surface to 550 ft; 12 in. from 508 to 555 ft. 10 in. from 595 to 625 ft, 635 to 660 ft, 700 to 725 ft, and 775 to 780 ft. Screen: 10 in. from 555 to 595 ft, 625 to 635 ft, 660 to 700 ft, and 725 to 775 ft.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
73	311720085425901	Fort Rucker Military Reservation	Layne Central 1981	940	18 10	Kp Kr	309	188 179.2 181.9 190 187	11-01-81 6-29-82 11-15-82 10-21-86 3-31-87	T	P	Cairns Field Well. Casing: 18 in. from surface to 840 ft; 10 in. from 800 to 845 ft and 880 to 910 ft. Screen: 10 in. from 845 to 880 ft and 910 to 940 ft. Reported drawdown 90 ft after 25 hrs pumping 754 gal/min 11-01-81. Electric logs available in files of the USGS. M-18.
74	312006085410601	Fort Rucker Military reservation	Layne Central 1982	780	18 10	Tc Kp	300	167 167.9 170 170.1 180.0 178.4 174.4	4-30-82 7-02-82 11-15-82 10-01-83 10-31-84 10-21-86 3-31-87	T	P	Ft. Rucker Well 10. Casing: 18 in. from surface to 555 ft, 640 to 654 ft, and 684 to 750 ft. Screen: 10 in. from 560 to 640 ft, 654 to 684 ft, and 750 to 780 ft. Reported drawdown 51 ft after pumping 503 gal/min 4-03-82. Electric logs available in the files of USGS. N-10.
75	312117085373701	Fort Rucker Military reservation	Smith Well and Supply Co. 1975	246	8 4	Tnf	231	65 86 81 85.4 85.7 90.3 94.5 93.1	4-26-75 12-01-81 6-29-82 11-16-82 5-08-84 10-31-84 10-21-86 3-31-87	S	P	Hatch field. Casing: 8 in. from surface to 270 ft; 4 in. from 255 to 276 ft. Screen: 4 in. from 276 to 296 ft. Reported drawdown 29 ft after 36 hrs pumping 59 gal/min 4-26-75. N-8.
76	311949085354801	Newton	Layne Central 1959	695	12 6	Kp	325	147 156.9	1959 7-20-65	T	P	Newton Well 1. Casing: 12 in. from surface to 608 ft; 6 in. from 558 to 623 ft, 633 to 648 ft and 658 to 685 ft. Screen: 6 in. from 623 to 633 ft, 648 to 658 ft, and 685 to 695 ft. Reported drawdown 45 ft when pumped at 254 gal/min in 1959. N-3.
77	311917085353501	Newton	Layne Central 1978	720	18 8	Tc Kp	351	226 269.1	6-19-78 12-09-81	T	P	Newton Well 2. Casing: 18 in. from surface to 530 ft; 8 in. from 480 to 535 ft, 555 to 580 ft, 620 to 656 ft, and 686 to 710 ft. Screen: 8 in. from 535 to 555 ft, 580 to 620 ft, 656 to 686 ft, and 710 to 720 ft. Reported drawdown 116 ft after 24 hrs pumping 530 gal/min 6-19-78. N-9.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
78	311844085325801	Pinckard	Gray Artesian Well Co.	745	8	Tc Kp	381	85	1946	N	U	Pinckard Well 1. Casing: 8 in. to undetermined depth. Pumped at 50 gal/min in 1944. Well not presently used. O-8.
79	311838085322701	Pinckard	Layne Central 1965	720	12 6	Kp	385	210 262.6 262.6 265.4 269.2 274.3 264.8 260 265.6 270	7-27-65 12-09-81 11-07-82 11-04-83 5-10-84 10-30-84 4-23-85 10-25-85 4-16-86 3-31-87	T	P	Pinckard Well 2. Casing: 12 in. from surface to 700 ft; 6 in. from 645 to 705 ft. Screen: 6 in. from 705 to 755 ft. Reported drawdown 28 ft after 3 hrs pumping 100 gal/min 7-27-65. O-12.
80	311908085293701	Midland City	Layne Central 1945	548	12 6	Tnf Tc	375.5	188	1945	T	P	Midland City Well 1. Casing: 12 in. from surface to 336 ft; 6 in. from 289 to 506 ft. Screen: 6 in. from 506 to 547 ft. Reported drawdown 44 ft after 8 hrs pumping 80 gal/min in 1945.
81	311914085291501	Midland City	Layne Central 1960	752	12 6	Tc Kp	390	223 263.6 275.9	1960 12-01-81 11-17-82	T	P	Midland City Well 2. Casing: 12 in. from surface to 650 ft; 6 in. from 570 to 655 ft, 665 to 671 ft, 681 to 690 ft, and 705 to 737 ft. Screen: 6 in. from 655 to 665 ft, 671 to 681 ft, 690 to 705 ft, and 737 to 752 ft. Reported drawdown 2.2 ft when pumped at 49 gal/min in 1960. O-4.
82	311850085274301	Dothan	Layne Central 1943	672	18 8	Tc Kp	367	172 250 247.2 254.3 296.4 252.2 260.4	1943 1-26-82 6-30-82 11-19-82 10-30-84 5-15-85 10-20-86	T	P	Dothan Well 4. Casing: 18 in. from surface to 492 ft; 8 in. from 425 to 570 ft. Screen: 8 in. from 570 to 670 ft. Reported drawdown 41.5 ft after 24 hrs pumping 550 gal/min in 1943. P-7.
83	311851085273001	Dothan	Layne Central 1942	678	18	Tc Kp	375	170 254	1942 2-01-82	T	P	Dothan Well 2. Reported drawdown 31 ft after pumping 550 gal/min in 1942. P-6.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
84	311658085271001	Dothan	Layne Central 1974	860	18 10	Kp	327.2	184 233.5 219.2	4-21-76 1-27-82 6-30-82	T	P	Dothan Well 23. Casing: 18 in. from surface to 710 ft; 10 in. from 610 to 715 ft and 760 to 790 ft. Screen: 10 in. from 715 to 760 ft and 790 to 860 ft. Reported drawdown 15 ft after 8 hrs pumping 1,001 gal/min 4-21-76. Electric logs available in the files of USGS. D-2.
85	311647085265701	Dothan	Layne Central 1973	838	18 10	Kp	339.3	190 227.5	1974 1-27-82	T	P	Dothan Well 22. Casing: 18 in. from surface to 734 ft; 10 in. from 654 to 739 ft and 779 to 793 ft. Screen: 10 in. from 739 to 779 ft and 793 to 838 ft. Reported drawdown 16 ft after pumping 744 gal/min.
86	312018085204301	Head-land	Layne Central 1946	659	16 8	Tc Kp	381	191 255.8 258.5 257.3 261.2 267.2 271.3	5-21-64 2-04-82 11-14-84 5-01-85 5-02-86 10-23-86 3-26-87	T	P	Headland Well 1. Casing: 16 in. from surface to 360 ft; 8 in. from 320 to 590 ft and 610 to 644 ft. Screen: 8 in. from 590 to 610 ft and 644 to 659 ft. Reported drawdown 24 ft after 1 hr pumping 336 gal/min 5-21-64. X-1.
87	312037085202001	Head-land	Layne Central 1964	697	16 8	Tc Kp	373	185 219 224	6-27-64 2-04-82 6-29-82	T	P	Headland Well 2. Casing: 16 in. from surface to 540 ft; 8 in. from 480 to 600 ft, 620 to 657 ft and 677 to 687 ft. Screen: 8 in. from 600 to 620 ft, 657 to 677 ft, and 687 to 697 ft. Reported drawdown 28 ft after 8 hrs pumping 508 gal/min 6-27-64.
88	311739085065601	Columbia	Layne Central 1971	512	16 8	Ttu Tnf	200	70	1971	T	P	Columbia Well 2. Casing: 16 in. from surface to 425 ft; 8 in. from 384 to 430 ft. Screen: 8 in. from 430 to 460 ft. Reported drawdown 38 ft when pumped 8 hrs at 302 gal/min in 1971.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
89	311728085064301	Columbia	Layne Central 1953	486	10 8	Ttu	211	54 123.4 122.4 121.2 127.2 127.6 124.7 129.9 131.9 130.2	10-05-53 10-19-82 11-08-83 5-16-84 11-02-84 5-08-85 10-24-85 4-22-86 10-20-86 3-30-87	S	P	Columbia Well 1. Casing: 10 in. from surface to 23 ft; 8 in. from 23 to 456 ft. 6 in. from 443 to 456 ft. Screen: 6 in. from 456 to 486 ft and 486 to 490 ft. Drawdown 22 ft when pumped 8 hrs at 200 gal/min in 1953. A-4.
90	311753085204901	Kinsey	Alton Powell 1967	238	12 6	Tth	290	63	1-27-67	T	P	Kinsey Well 1. Casing: 12 in. from surface to 217 ft; 6 in. from 185 to 219 ft. Screen: 6 in. from 219 to 239 ft. Drawdown 83 ft after pumping 16 hrs at 134 gal/min in 1967.
91	311623085232401	Dothan	Layne Central 1982	1105	18 10	Kp kr	302	192 194 195	9-10-81 2-09-82 4-14-82	T	P	Dothan Well 26. Casing: 18 in. from surface to 735 ft; 10 in. from 655 to 740 ft, 760 to 820 ft, 840 to 860 ft, and 960 to 1,050 ft. Screen: 10 in. from 740 to 760 ft, 820 to 840 ft, 860 to 960 ft, and 1,050 to 1,080 ft. Reported drawdown 67 ft after pumping 851 gal/min 9-10-81; 65 ft after 25.5 hrs pumping 802 gal/min 2-09-82. D-4.
92	311616085251001	Dothan	Layne Central 1979	975	24 10	Kp kr	349	234 240	1979 1-28-82	T	P	Dothan Well 24. Casing: 24 in. from surface to 830 ft; 10 in. from 750 to 835 ft. Screen: 10 in. from 835 to 975 ft. Reported drawdown 13 ft after 12 hrs pumping 805 gal/min in 1980.
93	311530085260001	Dothan	Layne Central 1971	715	18 10	Tnf Tc	280.2	171 222.5	2-15-73 1-26-82	T	P	Dothan Well 19. Casing: 18 in. from surface to 555 ft; 10 in. from 493 to 560 ft and 620 to 675 ft. Screen: 10 in. from 560 to 620 ft and 675 to 715 ft. Reported drawdown 167 ft after pumping 602 gal/min 2-15-73. 1-15.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
94	311609085263801	Dothan	Layne Central 1971	800	18 10	Tnf Tc Kp	330	174 227	2-15-72 1-28-82	T	P	Dothan Well 20. Casing: 18 in. from surface to 540 ft; 10 in. from 480 to 545 ft, 605 to 630 ft, and 670 to 770 ft. Screen: 8 in. from 545 to 605 ft, 630 to 670 ft, and 770 to 800 ft. Reported drawdown 35 ft after pumping 805 gal/min 2-15-72
95	311555085272401	Dothan	Layne Central 1979	835	18 10	Kp	319	200 213	1979 2-01-82	T	P	Dothan Well 25. Casing: 18 in. from surface to 730 ft; 10 in. from 655 to 735 ft. Screen: 10 in. from 735 to 835 ft. Reported drawdown 38 ft after 12 hrs pumping 850 gal/min in 1980
96	311513085303301	Dothan	Smith Well and Supply Co. 1981	455	12 6	Ttu Tnf	210	117 109	10-24-81 11-04-82	T	P	Waste Treatment Facility. Casing: 12 in. from surface to 290 ft; 6 in. from 240 to 295 ft and 315 to 405 ft. Screen: 6 in. from 295 to 315 ft and 405 to 455 ft. Reported drawdown 33 ft after 24 hrs pumping 226 gal/min 10-29-81.
97	311338085334401	Fort Rucker Military Reservation	Emmett Hughes Drilling Co.	468	6	Tt Ttu	319	66 69.9 70.4 70.0 71.1 71.6 69.2 71.1 69.0	1964 12-02-81 11-04-82 10-31-84 4-23-85 Fall--85 4-16-86 10-21-86 3-31-87	S	P	Toth Field. Casing: 6 in. from surface to 200 ft; none below. Electric logs available in the files of USGS. H-4.
98	311348085390801	Fort Rucker Military Reservation	Smith Well and Supply Co. 1975	423	8 4	Ttu	349	212 240.5 238.3 239.8 234.0 238.1 244.9 243.1 247.0 246.5	5-28-75 12-02-81 11-10-82 11-03-83 10-31-84 4-23-85 Fall--85 4-16-86 10-21-86 3-31-87	S	P	Allen Field. Casing: 8 in. from surface to 350 ft; 4 in. from 350 to 393 ft. Screen: 4 in. from 393 to 423 ft. Reported drawdown 20 ft after 36 hrs pumping 50 gal/min 5-28-75. I-14.
99	311538085532301	Batten's Cross roads	English Well and Supply Co.	812	6	Tc	350	183 220.0 222.0 223.0 223.6 224.9 232.0 227.0 231.0 229.3 237.2 232.7	4-29-68 1-06-82 6-29-82 11-15-82 11-01-83 5-11-84 11-01-84 4-23-85 10-25-85 4-17-86 10-22-86 4-01-87	S	P	Batten's Cross Roads Well 1. Casing: 6 in. from surface to 714 ft; none below. Reported drawdown 15 ft after 24 hrs pumping 112 gal/min 4-29-68. Reportedly pumped 153 gal/min in 1977. Q-4

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level Above (-) or below land surface	Water level Date of measurement	Method of lift	Use of well	Remarks
100	311515085572301	Conagra Inc.	Layne Central 1978	880	18	Tc Kp	250	100 147	7-14-78 1-28-82	T	P	Conagra Well 2. Casing: 18 in. from surface to 700 ft; none below. Reported drawdown 95 ft after 48 hrs pumping 750 gal/min in 1978.
101	331516085574201	Conagra Inc.	Layne Central 1971	725	--	Tc(?) Kp(?)	296	195 197.9	1-05-82 11-11-82	T	P	Conagra Well 1. Reportedly pumped 750 gal/min 2-25-71
102	311303086101301	Kinston	Layne Central 1956	185	20 10 6	Tl	269	119.2 104.7 105.6 100.5 109.9 110.4 99.2 96.2	11-11-82 11-02-83 5-14-84 11-01-84 10-29-85 4-21-86 10-23-86 4-01-87	T	P	Kinston Well 1. Casing: 20 in. from surface to 100 ft; 10 in. from surface to 134 ft; 6 in. from 134 to 135 ft. Screen: 6 in. from 135 to 185 ft. T-7.
103	311331086102701	Kinston	Acme Drilling Co. 1971	363	10 4	Tth	269	97	9-30-71	S	P	Kinston Well 2. Casing: 10 in. from surface to 269 ft; 4 in. from 232 to 269 ft. Screen: 4 in. from 269 to 314 ft and 347 to 357 ft. Drawdown 118 ft after pumping 8 hrs at 75 gal/min 9-30-71.
104	311523085235601	Dothan	Layne Central 1961	804	18 8	Ttu Tnf	342.3	205	1961	T	P	Dothan Well 15. Casing: 18 in. from surface to 534 ft; 8 in. from 454 to 539 ft and 589 to 664 ft. Screen: 8 in. from 539 to 589 ft and 664 to 714 ft. Reported drawdown 162 ft after 8 hrs pumping 708 gal/min 9-19-61. I-1.
105	311420085230401	Dothan	Layne Central 1966	765	18 8	Ttu Tnf Tc	310.8	206 278 278.8 298.5 307.9 326.7 306.4	8-01-66 2-01-82 11-08-83 5-10-84 10-30-84 4-22-86 3-30-87	T	P	Dothan Well 17. Casing: 18 in. from surface to 555 ft; 8 in. from 500 to 560 ft and 620 to 725 ft. Screen: 8 in. from 560 to 620 ft and 725 to 765 ft. Reported drawdown 110 ft after pumping 640 gal/min 8-02-66.
106	311349085235901	Dothan	Layne Central 1946	786	18 8	Ttu Tnf	320.2	157 302	6-08-46 1-27-82	T	P	Dothan Well 9. Casing: 18 in. from surface to 556 ft; 8 in. from 476 to 571 ft, 581 to 601 ft, and 651 to 751 ft. Screen: 8 in. from 571 to 581 ft, 601 to 651 ft, and 751 to 786 ft. Reported drawdown 20 ft after 8 hrs pumping 258 gal/min 6-08-46. I-2.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
107	311355085241601	Dothan	Layne Central 1953	820	18 8	Ttu Tnf Tc	355.5	223 330	3-04-54 1-28-82	T	P	Dothan Well 12. Casing: 18 in. from surface to 605 ft; 8 in. from 525 to 610 ft and 670 to 780 ft. Screen: 8 in. from 610 to 670 ft and 780 to 820 ft. Reported drawdown 56 ft after 8 hrs pumping 510 gal/min 3-04-54. I-3.
108	311330085245901	Dothan	Layne Central 1951	754	18 8	Ttu Tnf Tc	295.6	150 264 267	12-18-56 1-26-82 7-01-82	T	P	Dothan Well 10. Casing: 18 in. from surface to 558 ft; 8 in. from 478 to 563 ft, 568 to 580 ft, 600 to 635 ft, and 660 to 714 ft. Screen: 8 in. from 563 to 568 ft, 580 to 600 ft, 635 to 660 ft, and 714 to 754 ft. Reported drawdown 73 ft after 8 hrs pumping 530 gal/min 12-18-56. I-6.
109	311314085235601	Dothan	Layne Central 1955	325	16 10	Tl Tth	322.0	52 36.6 30.7 34.8 40.4 33.6 42.3 39.0 42.3 36.7	4-01-55 1-26-82 11-03-82 5-10-84 10-30-84 5-15-85 10-22-85 4-15-86 10-20-86 3-30-87	T	P	Dothan Well 7. Casing: 16 in. from surface to 132 ft; 8 in. from 162 to 235 ft, 250 to 260 ft, and 275 to 285 ft. Screen: 10 in. from 132 to 162 ft, 235 to 250 ft, 260 to 275 ft, and 285 to 325 ft. Reported drawdown 53 ft after pumping 584 gal/min 4-01-55. I-8.
110	311232085250101	Dothan	Smith Well and Supply Co.	360	16 12 10	Tl Tth Tt	290.6	32	7-22-86	T	P	New Shallow Well. Casing: 24 in. from surface to 100 ft; 16 in. from surface to 100 ft; 12 in. from 135 to 175 ft; 10 in. from 220 to 260 ft and 360 to 370 ft. Screen: 10 in. from 100 to 135 ft, 175 to 220 ft, and 260 to 360 ft.
111	311218085242301	Dothan	Layne Central 1963	805	18 8	Ttu Tnf Tc	282.6	163 252	2-20-64 2-01-82	T	P	Dothan Well 16. Casing: 18 in. from surface to 590 ft; 8 in. from 510 to 595 ft and 675 to 685 ft. Screen: 8 in. from 595 to 675 ft and 785 to 805 ft. Reported drawdown 78 ft after 1.5 hrs pumping 560 gal/min 2-20-64. Electric logs available in the files of USGS. I-12.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
112	311115085235001	Dothan	Layne Central 1973	751	18 10	Ttu Tnf	311.1	216 271 278	2-19-73 2-02-82 7-01-82	T	P	Dothan Well 21. Casing: 18 in. from surface to 646 ft; 10 in. from 576 to 651 ft. Screen: 10 in. from 651 to 751 ft. Reported drawdown 94 ft after pumping 556 gal/min 2-19-73. Electric logs available in the files of USGS. I-20.
113	311231085235101	Dothan	Layne Central 1953	835	24 18 8	Ttu Tnf Tc	291.4	158 275 279.3 286.8 289.9 311.3 316.6 310.8 313.2	3-04-54 1-28-82 11-08-83 5-10-84 10-30-84 10-22-85 4-16-86 10-20-86 3-30-87	T	P	Dothan Well 11. Casing: 24 in. from surface to 95 ft; 18 in. from 95 to 630 ft; 8 in. from 550 to 635 ft and 725 to 805 ft. Screen: 8 in. from 635 to 725 ft and 805 to 835 ft. Reported drawdown 181 ft after 8 hrs pumping 520 gal/min 3-04-54. I-11.
114	311129085222901	Dothan	Layne Central 1961	804	18 8	Ttu Tnf	342.3	205 313	1961 2-03-82	T	P	Dothan Well 14. Casing: 18 in. from surface to 700 ft; 8 in. from 620 to 704 ft. Screen: 8 in. from 704 to 804 ft. Reported drawdown 136 ft after 8 hrs pumping 699 gal/min in 1961. J-6.
115	311325085215701	Dothan	Layne Central 1956	720	18 8	Ttu Tnf	304.7	150 277 281.7 275.7 304 298.4 313.4 306.3 321.3 318.8	12-18-56 1-27-82 6-30-82 11-04-83 5-10-84 10-30-84 10-22-85 4-22-86 10-20-86 3-30-87	T	P	Dothan Well 13. Casing: 18 in. from surface to 575 ft; 8 in. from 495 to 580 ft. Screen: 8 in. from 580 to 720 ft. Reported drawdown 73 ft after 8 hrs pumping 530 gal/min 12-18-56. J-3.
116	311203085181601	Cowarts	Alton Powell 1966	322	8 6 4	Tth	330	151 160 158	11-03-82 10-20-86 3-30-87	T	P	Cowarts Well 1. Casing: 8 in. from surface to 274 ft; 6 in. from 235 to 276 ft; 4 in. from 322 to 330 ft. Screen: 4 in. from 276 to 322 ft. J-8.
117	311508085163601	Webb	Smith Well and Supply Co.	300	6	Tth	280	85 94.9 105.1 99.0 96.5 93.6 101.2 98.2	8-22-78 5-15-84 11-02-84 5-08-85 10-24-85 4-22-86 10-20-86 3-30-87	T	P	Webb Well 2. Casing: 12 in. from surface to 256 ft; 8 in. from 219 to 259 ft; 6 in. from 259 to 270 ft and 300 to 315 ft. Screen: 6 in. from 270 to 300 ft. K-15.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
118	311542085162701	Webb	Alton Powell 1965	296	8 4	Tth	277	74	11-03-82	T	P	Webb Well 1. Casing: 8 in. from surface to 266 ft; 4 in. from 234 to 266 ft, 283 to 290 ft, and 296 to 301 ft. Screen 4 in. from 266 to 283 ft and 290 to 296 ft. K-4.
119	311105085143101	Ashford	Layne Central 1937	115	8	Tj	247	28 71.1 65.2 71.9 80.3 38.5 27.4 32.3 23.9	1937 10-20-82 11-08-83 5-15-84 11-02-84 10-24-85 4-22-86 10-28-86 3-30-87	T	P	Ashford Well 2. Casing: 18 in. from surface to 65 ft; 8 in. from 65 to 95 ft. Screen: 8 in. from 95 to 115 ft. Lower water levels were measured prior to re-working well screens in early 1985. K-12.
120	311108085140901	Ashford	Gray Artesian 1956	307	8 4	Tj Tl	268	89.9	2-28-56	T	P	Ashford Well 1. Casing: 8 in. from surface to 130 ft; 4 in. from 160 to 257 ft and 287 to 307 ft. Screen: 6 in. from 130 to 160 ft; 4 in. from 257 to 287 ft. Pumped at 250 gal/min in 1956. K-13.
121	311108085133901	Ashford	Layne Central 1964	412	16 8	Tl Tth	281	152.5	3-23-65	T	P	Ashford Well 3. Casing: 16 in. from surface to 164 ft; 10 in. from 114 to 275 ft; 8 in. from 295 to 340 ft and 360 to 412 ft. Screen: 8 in. from 275 to 295 ft and 340 to 360 ft. Drawdown 76 ft when pumped at 250 gal/min in 1967. K-14.
122	310855085051601	Gordon	Smith Well and Supply Co. 1977	305	8 6	Tth Th	217	110 125 122 124 120.1 122.4 127.2 132.4 131.9	7-21-77 10-19-82 11-04-83 10-29-84 5-07-85 10-24-85 4-22-86 10-20-86 3-30-87	T	P	Gordon Well 2. Casing: 12 in. from surface to 217 ft; 8 in. from 192 to 220 ft; 6 in. from 220 to 225 ft, 275 to 280 ft, and 305 to 310 ft. Screen: 6 in. from 225 to 275 ft and 280 to 305 ft. Drawdown 62 ft when pumped 24 hrs at 217 gal/min 7-21-77. N-14.
123	310845085054501	Gordon	W. C. Smith 1958	366	4	Tth	168	55	1958	T	P	Gordon Well 1. Casing: 4 in. to undetermined depth. Pumped at 133 gal/min in 1965. Currently supplies swimming pools only. N-6.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
124	310941085280701	Taylor	Griner Drilling 1985	942	16	Tc	330	251.7 305.3	3-27-85 7-02-86	T	P	Taylor Well 1. Casing: 16 in. from surface to 862 ft; 8 in. from 797 to 872 ft. Screen: 8 in. from 872 to 942 ft. Reported drawdown 31 ft after 8 hrs pumping 285 gal/min 6-04-85
125	310810085311101	Malvern	Alton Powell 1968	267	12 6	Tl Tth	290	46 48 45	5-04-68 10-14-82 11-06-83	T	P	Malvern Well 2. Casing: 12 in. from surface to 179 ft; 6 in. from 137 to 181 ft, 188 to 213 ft, and 225 to 245 ft. Screen: 6 in. from 181 to 188 ft, 213 to 225 ft, and 245 to 267 ft. N-8.
126	310821085320901	Malvern	Alton Powell 1981	313	6 4	Tl	320	85 77.4 72.5 88.0 76.0 72.6	3-20-81 10-14-82 5-04-84 5-03-85 5-01-86 3-26-87	T	P	Malvern Well 2. Casing: 12 in. from surface to 211 ft; 8 in. from 171 to 214 ft; 6 in. from 214 to 215 ft and 250 to 267 ft. Screen: 6 in. from 215 to 250 ft and 267 to 293 ft; 4 in. from 293 to 313 ft. Reported drawdown 108.5 ft after 24 hrs pumping 108 gal/min 3-20-81. N-9.
127	310633408535310I	Slocomb	----- 1903	550	8	Tth	291	67	6-06-65	T	U	Slocomb Well 1. Construction not determined. Drawdown 46 ft when pumped 2 hrs at 201 gal/min 6-06-65. M-4.
128	310628085355601	Slocomb	Layne Central 1968	810	12 6	Ttu Tnf(?)	285	150	1968	T	P	Slocomb Well 2. Casing: 12 in. from surface to 765 ft; 6 in. from 700 to 770 ft and 810 to 820 ft. Screen: 6 in. from 770 to 810 ft. Drawdown 90 ft after 8 hrs pumping at 350 gal/min in 1968.
129	310613085410301	Hartford	Layne Central 1974	450	24 8	Tl Tth	240	22	1974	T	P	Hartford Well 3. Casing: 24 in. from surface to 178 ft; 8 in. from 130 to 180 ft, 225 to 260 ft, and 310 to 345 ft. Screen: 8 in. from 180 to 225 ft, 260 to 310 ft, and 345 to 450 ft. Drawdown 111 ft after pumping 24 hrs at 361 gal/min in 1974.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
130	310607085412901	Hartford	Gray Artesian Well Co. 1937	322	8	Tt	262	24.1 25.6 24.6 23.0 22.8	11-08-67 10-18-82 11-30-83 5-01-86 3-26-87	N	U	Hartford abandoned well. Construction not determined. Pumped at 250 gal/min in 1946. Well is not presently used. L-7.
131	310614085413101	Hartford	Layne Central 1956	480	18 10 8	Tl Tth	264	56 52.0 47.5 52.7 54.6 55.8 57.2 52.6	11-14-57 12-01-83 5-04-84 11-15-84 5-02-85 10-31-85 4-30-86 4-20-87	T	P	Hartford Well 2. Casing: 18 in. from surface to 175 ft; 10 in. from 115 to 175 ft; 8 in. from 175 to 180 ft, 260 to 300 ft, and 340 to 400 ft. Screen: 8 in. from 180 to 260 ft, 300 to 340 ft, and 400 to 480 ft. Drawdown 103 ft after pumping 8 hrs at 350 gal/min in August 1949. L-6.
132	310617085414301	Hartford	Layne Central 1949	365	18 8	Tl Tth	270	29 59.6 42.3 40.6 48.4 39.6	8-08-49 11-05-82 11-15-84 5-03-85 10-23-86 4-20-87	T	P	Hartford Well 1. Casing: 18 in. from surface to 140 ft; 8 in. from surface to 155 ft, 245 to 309 ft, and 365 to 377 ft. Screen: 8 in. from 155 to 245 ft and 309 to 365 ft. Drawdown 92 ft after 8 hrs pumping at 351 gal/min in August 1949. L-5.
133	310909085435601	Fort Rucker Military Reservation	Smith Well and Supply Co. 1975	351	8 4	Ttu	267	112 112.7	6-28-75 11-10-82	S	P	High Bluff Well 1. Casing: 8 in. from surface to 295 ft; 4 in. from 258 to 321 ft. Screen: 4 in. from 321 to 351 ft. Reported drawdown 74 ft after pumping 50 gal/min on 6-28-75.
134	311036085491101	Bellwood	Smith Well and Supply Co. 1979	560	8 4	Ttu	259	121	5-21-79	T	P	Bellwood Well 1. Casing: 8 in. from surface to 490 ft; 4 in. from 477 to 507 ft and 527 to 540 ft. Screen: 4 in. from 507 to 527 ft and 540 to 560 ft. Reported drawdown 134 ft after 1.1 hrs pumping 150 gal/min 5-29-71.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (+) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
135	311043085524601	Chancellor	Smith Well and Supply Co. 1984	360	12 4	Tt Tth	280	85	2-07-85	T	P	Chancellor Well 1. Casing: 12 in. from surface to 265 ft; 4 in. from 285 to 316 ft and 336 to 360 ft. Screen: 4 in. from 265 to 285 ft and 316 to 336 ft. Drawdown 115 ft after pumping 20 hrs at 150 gal/min 2-07-85.
136	311000085543801	Coffee Springs	Emmett Hughes 1964	790	6 4	Tnf	238	68.2 78.4 75.4 74.1 81.8 81.3 67.8 68.0 69.4 68.3 69.8 70.9 70.5 71.3 69.6	11-08-67 10-21-68 10-27-69 10-12-70 10-22-74 4-02-75 11-03-76 11-09-77 11-15-78 11-16-79 11-15-84 5-03-85 4-30-86 10-22-86 3-25-87	N	O	Obs. Well J-4. Abandoned prior to 1965. Casing: 6 in. to 200 ft; 4 in. from 200 to 750 ft; none below. Capacity not reported. Re-entered for geophysical logs in 1979.
137	311008085544101	Coffee Springs	----	---	---	---	---	---	----	S	P	Coffee Springs Well 2. Construction not determined.
138	311008085544201	Coffee Springs	Layne Central	288	10 6	Tl Tth	260	92	1946	T	P	Coffee Springs Well 1. Casing: 10 in. from surface to 185 ft; 6 in. from 86 to 192 ft and 222 to 268 ft. Screen: 6 in. from 192 to 222 ft and 268 to 288 ft. Reportedly pumped 50 gal/min in 1946. J-2.
139	310720086025601	Samson	Griner Drilling Co. 1986	519	20 12	Tl Th	180	48.6	6-30-86	N	T	Samson test well. Casing: 20 in. from surface to 292 ft; 12 in. from 232 to 300 ft, 335 to 382 ft, 392 to 445 ft, 480 to 499 ft, and 519 to 526 ft. Screen: 12 in. from 300 to 335 ft, 382 to 392 ft, 445 to 480 ft, and 499 to 519 ft.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
140	310603086023001	Samson	Layne Central 1955	544	16 10 8	Tl Tth	210	77.5 81.0 80.6 84.6 82.9 87.4 78.4	1964 11-08-82 11-19-84 5-03-85 10-31-85 4-30-86 3-26-87	T	P	Samson Well 2. Casing: 16 in. from surface to 210 ft; 10 in. from 150 to 215 ft; 8 in. from 255 to 340 ft, 360 to 410 ft, 420 to 476 ft, 486 to 500 ft, and 510 to 534 ft. Screen: 8 in. from 215 to 255 ft, 340 to 360 ft, 410 to 420 ft, 476 to 486 ft, 500 to 510 ft, and 534 to 544 ft. Total depth of hole 1,157 ft. I-7
141	310649086025501	Samson	Deep Well Drilling Co. 1948	237	8 6	Tl	205	60	1948	T	P	Samson Well 1. Casing: 8 in. from surface to 120 ft; 6 in. from 120 to 177 ft. Screen: 6 in. from 177 to 237 ft. Pumped at 265 gal/min in 1948. I-5.
142	310258085533901	Geneva	Layne Central 1979	520	18 12 10	Tl Tt	165	73.5 99.8 89.0 87.4 92.2 86.2 88.6 97.5 89.8	1979 11-05-82 11-29-83 11-15-84 5-03-85 10-31-85 4-30-86 10-23-86 3-26-87	T	P	Geneva Well 5. Casing: 18 in. from surface to 355 ft; 12 in. from 295 to 360 ft; 10 in. from 390 to 440 ft. Screen: 10 in. from 360 to 390 ft and 440 to 480 ft. S-8.
143	310112085532701	Geneva	Layne Central 1965	520	18 12 10	Tt Th	173	103.1 103.1 100.2 103.9 104.2 102.4 107.6 96.6	7-19-65 11-05-82 11-15-84 5-03-85 10-31-85 4-30-86 10-23-86 3-26-87	T	P	Geneva Well 4. Casing: 18 in. from surface to 414 ft; 12 in. from 360 to 418 ft; 10 in. from 438 to 480 ft. Screen: 10 in. from 418 to 438 ft and 480 to 520 ft. R-16.
144	310202085521701	Geneva	Layne Central 1947	438	16 8	Tth	101	26.6	1964	T	P	Geneva Well 2. Casing: 16 in. from surface to 260 ft; 8 in. from 220 to 327 ft, 347 to 398 ft, and 438 to 452 ft. Screen: 8 in. from 327 to 347 ft and 398 to 438 ft. Drawdown 183 ft when pumped 9 hrs at 290 gal/min 2-25-64. R-13.
145	310154085514601	Geneva	Reuben Hughes Drilling Co.	150	4	Tl	100	14.8 16.4 18.1 14.9 17.4 15.9 19.0 16.2	10-21-82 11-29-83 5-03-84 11-15-84 5-03-85 4-03-86 10-23-86 3-26-87	S	I	Shirt Factory well. Casing: 4 in. from surface to 67 ft; none below. Known as "Shirt Factory" well. Unused in 1984. R-10.

Table 2.--Records of public water-supply wells in the study area--Continued

Well number	Geographic coordinate number	Well owner	Driller and year drilled	Well depth (feet)	Well diam. (inches)	Water bearing unit	Altitude of land surface	Water level: Above (-) or below land surface	Water level: Date of measurement	Method of lift	Use of well	Remarks
146	310154085514401	Geneva	Layne Central 1955	1040	16 10	Tnf	100	- 45 - 39.5 - 12 - 13.2 - 6.3 - 5.2 - 5.0	1956 11-29-83 11-05-82 11-15-84 4-30-86 10-23-86 3-26-87	F,T	P	Geneva Well 3. Casing: 16 in. from surface to 975 ft. Screen: 10 in. from 980 to 1,040 ft. Drawdown 31 ft when pumped 8 hrs at 630 gal/min in 1956. Reported to flow 600 gal/min in 1964. R-11.
147	310051085444401	Black	Acme Drilling 1968	296	6 4	Tl Tth(?)	250	110	1968	S	P	Black Well 1. Casing: 6 in. from surface to 270 ft; Screen: 4 in. from 270 to 296 ft. Drawdown 52 ft when pumped 8 hrs at 224 gal/min in May 1968.
148	310033085242601	Ala. Highway Department	Alton Powell 1967	250	12 6 4	Tl Tt	175	34 35.2 39.5 39.3 37.9 42.7 37.0	3-16-67 6-06-83 10-29-84 5-07-85 4-15-86 10-28-86 3-30-87	S	P	Rest area well. Casing: 12 in. from surface to 126 ft; 6 in. from surface to 216 ft; 4 in. from 208 to 230 ft. Screen: 4 in. from 231 to 251 ft. Drawdown 17 ft when pumped 24 hrs at 29 gal/min 7-28-67. AA-1.
149	310403085183001	Cotton-wood	Graves Well Drilling	297	12 6	Tl	165	28	1982	T	P	Cottonwood Well 2. Casing: 12 in. from surface to 204 ft; 6 in. from 200 to 257 ft and 297 to 299 ft. Screen: 6 in. from 257 to 297 ft. Drawdown 99 ft when pumped at 302 gal/min in 1982. S-9.
150	310300085180301	Cotton-wood	F.J. Greene 1942	185	6	Tj Tl	150	12 26.1	3-20-46 3-21-68	T	U	Abandoned well. Casing: 6 in. from surface to 165 ft. Screen: 4 in. from 165 to 185 ft. Yield and drawdown not determined. Formerly used for public water supply. S-5.
151	310311085175301	Cotton-wood	Layne Central 1968	242	16 8	Tj Tl Tth	150	--	--	T	P	Cottonwood Well 1. Casing: 16 in. from surface to 167 ft; 8 in. from 117 to 172 ft. Screen: 8 in. from 172 to 232 ft. Drawdown 59 ft when pumped 8 hrs at 350 gal/min in 1968.

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