GROUND WATER IN

MARSHALL COUNTY, ALABAMA

GEOLOGICAL SURVEY OF ALABAMA *BULLETIN 85*

Prepared in cooperation with the
United States Geological Survey

GEOLOGICAL SURVEY OF ALABAMA

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DIVISION OF WATER RESOURCES

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BULLETIN 85

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A Reconnaissance

By Thomas H. Sanford, Jr.

Prepared in cooperation with the
United States Geological Survey

UNIVERSITY, ALABAMA

1966

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University, Alabama
April 7, 1966

Honorable George C. Wallace
Governor of Alabama
Montgomery, Alabama

Dear Governor Wallace:

I have the honor to transmit the report, "Ground Water in Marshall County, Alabama," by Thomas H. Sanford, Jr. of the U.S. Geological Survey, which has been published as Bulletin 85 of the Geological Survey of Alabama.

The availability of ground water in Marshall County is governed by the topography and by the physical characteristics of the geologic formations. The two principal aquifers in the county are beds of sandstone and limestone.

Areas adjacent to the Sequatchee Valley, along Honeycomb Creek, and on Brindley and Sand Mountains offer the greatest potential for the development of industrial water supplies in Marshall County. Individual wells in these areas will produce from 150 to 700 gallons per minute.

Water from the sandstone aquifers is soft to hard and is low in dissolved-solids content, but is high in iron content and is commonly corrosive. Water from the limestone aquifers is hard.

Respectfully,

Philip E. LaMoreaux
State Geologist

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A Reconnaissance

By Thomas H. Sanford, Jr.

SUMMARY

The availability of ground water in Marshall County is governed by the topography and by the physical characteristics of the geologic formations. In this report the county is subdivided into areas where ground-water availability is considered either good, fair, or poor.

Ground water adequate for municipal and industrial supplies is available in the areas outlined as good, where individual wells will produce from 150 to 700 gpm (gallons per minute). These areas are along the sides of the Sequatchie Valley, along Honeycomb Creek, and on Brindley Mountain and Sand Mountain where the Pottsville Formation is more than 250 feet thick.

Ground water adequate for domestic supplies, 10 gpm or more, is available in the areas outlined as fair. These areas are along the center of the Sequatchie Valley, along the narrow valleys in the northwestern part of the county, and on the uplands that are underlain by 100 to 250 feet of the Pottsville Formation.

Ground water is inadequate for dependable supplies in areas outlined as poor; most wells furnish only intermittent or seasonal supplies. These areas are on steep ridges, mountain slopes, and on the uplands near the bluffs and where the Pottsville Formation is less than 100 feet thick.

The dependability of ground water varies both seasonally and areally. Many springs are intermittent but others are perennial, some never discharging less than 3,000 gpm. Some wells are seasonally inadequate for domestic supply but others supply as much as 700 gpm for industrial use.

Water from the sandstone ranges from soft to hard and is low in dissolved solids, but it is high in iron content and commonly corrosive. Water from the limestone is hard and in some areas the water gives off a hydrogen sulfide (rotten egg) odor.

The estimated maximum ground-water withdrawals for all purposes in 1962 was 6,000,000 gallons per day.

INTRODUCTION

PURPOSE AND SCOPE

Municipal and industrial growth and modernization of rural homes and farming methods have increased the demand for ground-water information in Marshall County. The purposes of this reconnaissance report are to provide information to the people of Marshall County on the availability of ground water (pl. 1) and to document ground-water data for use in future detailed water-resources studies and development. This report summarizes the results of a 1-year study, started in August 1961, which included an inventory of selected wells and springs, reconnaissance geologic mapping, and chemical analyses of water samples.

COOPERATION AND ACKNOWLEDGMENT

The investigation was made by the U.S. Geological Survey in cooperation with the Geological Survey of Alabama.

The writer is grateful to those residents of Marshall County who supplied information on wells and springs, use of water, and other data needed for the evaluation of the availability of ground water in the county. Special thanks are given to Brown's Hardware and Drilling Co. and Kenneth Kilpatrick, Douglas, Ala.; Grady Campbell, Alder Springs, Ala.; T. T. Selvage, Grant, Ala.; Adams-Massey Drilling Co., Carrollton, Ga.; and Kermit Campbell, Scottsboro, Ala., for supplying driller's logs and other information on wells in the county. The cooperation of the superintendents of the water departments of Boaz and Arab is gratefully acknowledged.

PREVIOUS WORK

Information on ground water in Marshall County was published in 1933 in Geological Survey of Alabama Special Report 16, "Ground Water in the Paleozoic Rocks of Northern Alabama," by William D. Johnston, Jr. Johnston described the ground-water characteristics of four stratigraphic rock groups, which included the Chickamauga Limestone, Red Mountain Formation, limestones of Mississippian age, and Pottsville Formation.

GEOGRAPHY

LOCATION AND EXTENT OF THE AREA

Marshall County comprises an area of 627 square miles in northeast Alabama and in 1960 had a population of 48,018. The economy is mainly agricultural; cotton and corn are the principal crops. Industries, located around the incorporated towns, manufacture synthetics, poultry products, concrete products, and rubber tile. Recreation along the Tennessee River is a growing industry. The incorporated towns are Guntersville (the county seat), Albertville, Boaz, Arab, and Grant.

PHYSIOGRAPHY

Marshall County lies in the Cumberland Plateau section of the Appalachian Plateaus province. The topography is characterized by a submaturely dissected plateau of moderate to strong relief which consists of sandstone plateaus, rough mountain slopes and ridges, and limestone valleys. The altitude ranges from 570 feet where the Tennessee River leaves Marshall County to 1,374 feet on Gunters Mountain.

DRAINAGE

The Tennessee River enters Marshall County from the northeast and flows southwestward through the Sequatchie (Browns) Valley (Johnston, 1933, p. 20) to Guntersville where it turns northwestward. The Paint Rock River, a tributary of the Tennessee, forms the northwest boundary of Marshall County. The southwest end of the Sequatchie Valley is drained by Browns Creek, which flows northeastward into the Tennessee. South of the Tennessee

Valley Divide (pl. 1) the county is drained by Slab, Mud, and Clear Creeks, tributaries of Locust Fork and Mulberry Fork of the Black Warrior River.

CLIMATE

Marshall County has a humid and mild climate. The average annual temperature is about 60° F. Precipitation averages about 50 inches a year, consists mostly of rainfall, and generally is rather evenly distributed throughout the year.

GEOLOGY

The oldest rocks that crop out in the county are in the Sequatchie Valley. The valley trends northeast-southwest and divides the county into two almost equal parts. Along the northwest flank of the valley, which is an erosional feature on top of the Sequatchie anticline, the beds dip steeply but become nearly flat-lying within a distance of 2 miles; along the southeast flank they dip gently under the broad syncline of Sand Mountain. The structural features are shown on the cross section along line A–A′ on plate 2.

The Sequatchie Valley and the Tennessee River divide the county into three separate plateaus, each of which is partly dissected by steep erosional channels (pl. 2). These three plateaus—Gunters Mountain north of the Tennessee River, Sand Mountain east of the Sequatchie Valley, and Brindley Mountain west of the Sequatchie Valley and south of the Tennessee River—and the Sequatchie Valley represent the four major hydrologic areas in the county.

A generalized description of the geologic formations in Marshall County and their water-bearing properties are included on the geologic map (pl. 2). Sample logs and drillers' logs of wells, which describe the physical characteristics of the subsurface rock, are given in tables 5 and 6.

GROUND WATER

OCCURRENCE AND AVAILABILITY

The aquifers consist primarily of sandstone beneath the plateaus (uplands) and limestone in the valleys. They receive recharge from precipitation, mostly from rainfall on the outcrops. The storage capacity of the sandstone aquifers depends on the shape and arrangement of the particles; the degree to which they are sorted, compacted, and cemented; and on the amount of fracturing. The storage capacity of the limestone depends on the amount of fracturing and solution of the rocks.

Most of the natural ground-water discharge from the sandstone is through small springs and seeps along the banks of surface streams. Natural discharge from the limestone is primarily through large springs, some of which discharge more than 5,000 gpm. Records of discharge from the springs in March and July 1962 are shown in table 1.

The availability of ground water in the county is governed by the topography and by the physical characteristics of the geologic formations. The county is divided into areas where the availability of ground water is considered either good, fair, or poor, based on adequacy of municipal, industrial, or domestic supplies.

The availability of ground water is considered good where municipal and industrial supplies can be obtained. These areas are on the sandstone uplands where the Pottsville Formation is more than 250 feet thick and in the lowlands, which are underlain by formations of Mississippian age.

The municipal wells at Arab reportedly supply from 120 to 150 gpm at depths from 302 to 342 feet. Municipal and industrial supplies have been developed on Sand Mountain where the thickness of the Pottsville ranges from about 250 to 400 feet. Industrial wells at Boaz (X-1 and X-2) supply as much as 300 gpm, and the abandoned municipal well R-7 near Albertville had a tested capacity of 450 gpm in August 1949.

The depths of industrial wells in the lowlands are more variable than those on the sandstone uplands. Some wells capable of supplying several hundred gallons per minute intersect large solution cavities in the limestone at depths of less than 100 feet, one

Table 1.—*Discharge from springs in Marshall County*

Number	Name and location	Topography	Water-bearing formation	Discharge (gallons per minute)	Date of measurement	Temperature (° F)
D-9	Unnamed. Robertson Reservation. (NE¼ sec. 36, T. 6 S., R. 2 E.)	Valley, foot of mountain.	Gasper Formation [1]	70 430 90	12- 4-61 3- 7-62 7-18-62	60 56 68
E-2	Unnamed. SE¼ sec. 9, T. 6 S., R. 3 E.	Valley, foot of mountain adjacent to Paint Rock River.	Gasper Formation	160 17	3- 7-62 7-18-62	57 61
E-6	Unnamed. NE¼ sec. 13, T. 6 S., R. 3 E.	Slope of Gunters Mountain.	Pennington Formation	580 30	3- 7-62 7-18-62	57 59
E-8	Davis. NW¼ sec. 19, T. 6 S., R. 3 E.	Valley, foot of mountain adjacent to Paint Rock River.	Gasper Formation	980 65	3- 7-62 7-18-62	54 56
F-1	Unnamed. Oar Reservation. (SE¼ sec. 1, T. 6 S., R. 4 E.)	Low on slope of Gunters Mountain.	Bangor Limestone	470 18	3- 8-62 7-18-62	58 60
F-30	Unnamed. SW¼ sec. 36, T. 6 S., R. 4 E.	Valley, foot of ridge adjacent to Guntersville Lake.	Chickamauga Limestone	90 6	3- 8-62 7-18-62	58 61
J-1	Honeycomb. NE¼ sec. 1, T. 7 S., R. 3 E.	Valley, side of Honeycomb Creek.	Bangor Limestone	4,400 400	3- 7-62 7-18-62	55 62
K-1	Daniel. NW¼ sec. 3, T. 7 S., R. 2 E.	Valley, near foot of ridge.	Gasper Formation	100 1,400 20	12- 4-61 3- 5-62 7-18-62	60 57 61
K-8	Unnamed. NW¼ sec. 14, T. 7 S., R. 2 E.	Valley, near branch.	Gasper Formation	150 310 70	12- 4-61 3- 7-62 7-18-62	63 59 62
N-22	Unnamed. SE¼ sec. 36, T. 8 S., R. 2 E.	Valley, low slope of ridge adjacent to Browns Creek.	Chickamauga Limestone	130 0	3- 9-62 7-23-62	57 ...
O-4	Taylor. NE¼ sec. 7, T. 8 S., R. 3 E.	Valley, foot of hill.	Bangor Limestone	760 27	3- 9-62 7-23-62	59 60
O-5	Smith. NE¼ sec. 7, T. 8 S., R. 3 E.	Valley, foot of hill.	Bangor Limestone	780 8	3- 9-62 7-23-62	58 60
O-26	Ward. SW¼ sec. 27, T. 8 S., R. 3 E.	Valley, foot of Sand Mountain.	Bangor Limestone	1,000 120	3- 8-62 7-23-62	59 62

T-5	Clear. SW¼ sec. 6, T. 9 S., R. 3 E.	Valley, side of Big Spring Creek.	Gasper Formation and Ste. Genevieve Limestone undifferentiated	550 150	3- 8-62 7-23-62	63 66
U-2	Unnamed. NE¼ sec. 4, T. 9 S., R. 2 E.	Draw, near foot of Brindley Mountain.	Bangor Limestone	900 280	3- 9-62 7-23-62	62 65
U-3	Feemster. SW¼ sec. 9, T. 9 S., R. 2 E.	Low slope of Brindley Mountain.	Bangor Limestone	460 370	3- 9-62 7-23-62	60.5 61
U-4	Unnamed. NE¼ sec. 10, T. 9 S., R. 2 E.	Valley.	Chickamauga Limestone	45 0	3- 9-62 7-23-62	61 ...
U-11	Big. SW¼ sec. 26, T. 9 S., R. 2 E.	Valley.	Bangor Limestone	3,200 5,400 3,100	8-18-61 3- 8-62 7-23-62	61 61 62

[1] The nomenclature in this report follows that of the Geological Survey of Alabama but does not necessarily follow that in use by the U.S. Geological Survey.

of which is well O-2; others penetrate as much as 300 feet of broken and fractured beds of sandstone, limestone, and shale (O-8, O-9, and O-11); and still others penetrate less than 150 feet of weathered chert gravel (O-12, O-14, and O-15). Six springs that issue from limestone had flows exceeding 100 gpm in July 1962 (J-1, O-26, T-5, U-2, U-3, and U-11).

In areas designated fair, ground water is adequate for domestic use but generally inadequate for municipal and industrial supplies. These areas include uplands where the Pottsville is about 100 to 250 feet thick and lowlands where the less productive limestone formations crop out. The depths of wells in these areas are generally less than 200 feet. Wells have produced as much as 60 gpm on the sandstone upland (T-3) and 150 gpm in the limestone lowland (F-3). Measured flow from springs ranged from less than 10 to 70 gpm in July 1962.

Ground water is generally inadequate for domestic supply in the areas outlined as poor. Wells generally supply less than 5 gpm and some springs are intermittent. These areas include steep ridges, rugged mountain slopes, and upland areas underlain by less than 100 feet of Pottsville. Cavities in the limestone are generally above the water level during the dry seasons. Some springs supply water for small municipal and domestic use (E-6 and I-5).

QUALITY

Water from the sandstone is soft to hard and low in dissolved solids, but high in iron content and commonly corrosive. Water from the limestone is hard, and locally some wells yield water that has a hydrogen sulfide (rotten egg) odor.

The chloride content, hardness, specific conductance, and pH of water from most wells and springs inventoried were determined by laboratory procedures (table 4) and are summarized according to geologic source in table 2. Water samples were collected from nine wells and springs for which more comprehensive chemical analyses were made, and five other analyses were furnished by property owners (table 3).

Table 2.—*Summary of partial chemical analyses of water from wells and springs in Marshall County* [1]

Stratigraphic unit	Hardness as $CaCO_3$ (ppm)				Chloride (Cl) (ppm)				Specific conductance in micromhos at 25° C				pH			
	Number of samples	Low	High	Median	Number of samples	Low	High	Median	Number of samples	Low	High	Median	Number of samples	Low	High	Median
Pottsville Formation	249	3	159	32	248	1	125	5	235	16	681	118	205	4.2	8.5	7.0
Pennington Formation and Bangor Limestone	26	39	215	113	25	1	18	3	24	88	399	241	22	6.7	8.1	7.7
Hartselle Sandstone, Gasper Formation [2], and Ste. Genevieve Limestone	34	14	248	126	34	2	31	5	33	49	863	292	34	6.4	8.5	7.7
Tuscumbia Limestone and Fort Payne Chert	17	4	188	58	17	1	20	2	15	18	536	139	15	6.1	8.0	7.0
Chickamauga Limestone	19	34	286	176	19	1	24	7	19	220	739	371	19	7.2	8.3	7.6

[1] Based on partial chemical analysis in table 4.

[2] The nomenclature in this report follows that of the Geological Survey of Alabama but does not necessarily follow that in use by the U.S. Geological Survey.

Table 3.—*Chemical analyses of water from wells and springs in Marshall County*

(Results in parts per million except as indicated)

Well or spring no.: Numbers correspond to those on plate 1 and in table 4.

Water-bearing formation: Oc, Chickamauga Limestone; Mfp, Fort Payne Chert; Mgs, Ste. Genevieve Limestone and Gasper Formation [1]; Mg, Gasper Formation; Mh, Hartselle Sandstone; Mb, Bangor Limestone; Mp, Pennington Formation; IPpv, Pottsville Formation.

Well or spring	Owner	Date of collection	Water-bearing formation	Temperature (°F)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ calcium, magnesium	Specific conductance (micromhos at 25° C)	pH
U.S. Public Health Service drinking-water standards						0.3						250	250	0.8-1.7	45	500			
E-6	James C. Campbell	3- 2-62	Mp	57	.....	1.5	23	0.8	3.7	70	0	3.8	3.2	0	2.1	.....	61	134	7.2
F-3	Kate Duncan Smith DAR School.	3- 2-62	Mg	..	.....	2.6	48	4.3	4.1	164	0	7.8	.2	.1	2.4	.....	138	267	7.9
G-3	J. B. Leslie	.....	Oc (?)	..	27	21	104	78	2,160	410	49	1,360	3,170	6.0	9.8	7,700	580	11,100	8.7
J-21	Guntersville Yacht Club	3- 5-62	Oc	60	.....	.38	38	12	5.1	157	0	15	6.6	.1	.1	.....	142	279	7.7
K-8	Tennessee Valley Authority.	3- 2-62	Mg	60	.....	1.9	39	2.8	2.8	131	0	4.0	2.2	.1	1.6	.....	109	214	7.7
[2] M-9	City of Arab	6- 9-50	IPpv	..	56.4	11.5	9.2	3.6	2.9	2.1	0	7.9	5.3	.....	.....	134	82.6	.....	6.1
[3] M-13	....do.....	5-27-52	IPpv	..	32.7	6.4	26.2	7.3	1.6	60.6	0	2.5	2.7	.....	.....	153	115.6	.....	6.8
[4] O-8	Allied Mills, Inc	5- -59	Mh Mgs	..	10.1	.....	.....	.....	.....	.....	..	.....	1.0	.1	...	181	147.8	.....	7.5
[5] O-9	....do.....	1959	Mh Mgs	..	10	.....	.....	.....	.....	.....	..	.....	1.0	0	...	168	140	.....	7.8

O-12	Boaz Spinning Mills	3- 2-62	Mfp	66	.....	2.0	11	.7	2.1	32	0	.8	3.4	0	3.7	.....	31	72	7.0
S-10	American Rubber Co	3- 2-62	IPpv	63	.....	.97	29	5.4	22	156	0	5.4	5.4	.1	1.8	.....	96	262	7.9
S-47	City of Boaz	3- 2-62	IPpv	63	.....	2.7	24	7.1	13	113	0	13	6.8	.1	.1	.....	90	218	7.7
U-11	Howard McDerment	3- 2-62	Mb	61	.....	2.0	40	1.4	3.2	128	0	2.4	.8	0	1.4	.....	104	212	7.8
X-2	Gold Kist Poultry Growers.	3- 2-62	IPpv	62	.....	8.7	26	5.1	27	157	0	14	6.4	.1	.2	.....	86	280	7.8

[1] The nomenclature in this report follows that of the Geological Survey of Alabama but does not necessarily follow that in use by the U.S. Geological Survey.

[2] Analysis by Southern Testing Laboratory. Sample contained 16.5 ppm Fe_2O_3, 1.3 ppm Al_2O_3, and 30 ppm CO_2.

[3] Analysis by Southern Testing Laboratory. Sample contained 0.7 ppm alumina (Al_2O_3), 9.1 ppm iron oxide, 6.4 ppm suspended solids, 99.3 ppm alkalinity as $CaCO_3$ (methyl orange), 3.0 ppm free carbon dioxide.

[4] Analysis by Law and Company. Sample contained 0.8 ppm alumina (Al_2O_3), 0.3 ppm iron oxide (Fe_2O_3), 0.0 ppm manganese (Mn), 71.0 ppm lime (CaO), 8.5 ppm magnesia (MgO), 0.0 ppm soda (Na_2O), 2.8 ppm sulfite (SO_3), 19 ppm organic solids, 162 ppm mineral solids, 136 ppm (methyl orange) and 6 ppm (phenolphthalein) alkalinity as $CaCO_3$, 8 ppm free carbon dioxide.

[5] Analysis by Law and Company. Sample contained 0.2 ppm alumina (Al_2O_3), 0.1 ppm iron oxide (Fe_2O_3), 0.0 ppm manganese (Mn), 64.7 ppm lime (CaO), 9.8 ppm magnesia (MgO), 0.0 ppm soda (Na_2O), 2.8 ppm sulfite (SO_3), 57 ppm organic solids, 111 ppm mineral solids, 133 ppm (methyl orange) and 12.5 ppm (phenolphthalein) alkalinity as $CaCO_3$, 4.0 ppm free carbon dioxide.

USE

Most industrial and rural domestic water supplies in Marshall County are obtained from wells and springs. However, of the nearly 4½ mgd (million gallons per day) used for municipal supply only ¾ mgd is obtained from wells and springs. Although the towns of Arab, Boaz, and Grant have used ground water in the past, each is developing a surface supply. In 1962, Arab started construction of a filtration plant and pipeline to obtain water from Guntersville Lake at Browns Creek, because wells M-8, M-10, and M-13 were inadequate during periods of peak demand. The water supply from wells (S-47 and S-48) at Boaz is supplemented during periods of peak demand by the Albertville water plant on Guntersville Lake at Short Creek. The town of Grant, which is supplied by a spring (E-6), is part of a proposed water district which plans to obtain its supply from Guntersville Lake at Honeycomb Creek.

The estimated maximum ground-water withdrawals, for all purposes in 1962, are as follows:

	Gallons per day
Rural domestic and stock.....	1,500,000
Municipal	750,000
Industrial (self supplied).....	3,750,000
Total	6,000,000

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BASIC DATA

Table 4.—*Records of wells and springs in Marshall County*

Well or spring: Numbers correspond to those on plate 1 and in table 3; asterisk indicates chemical analysis given in table 3.

Type: C, combination dug and drilled well; D, drilled well; Du, dug well; S, spring.

Depth of well and water level: Depths shown in feet are reported; those shown in feet and tenths are measured.

Altitude: Altitudes are interpolated from topographic quadrangle maps.

Method of lift: F, flowing; M, manual; N, none; Ph, cylinder; Pv, rod; T, turbine; Tj, jet; Ts, submergible.

Use: D, domestic; Ind, industrial; Irr, irrigation; N, none; O, observation; P, public supply; S, stock.

Water-bearing unit: Oc, Chickamauga Limestone; Srm, Red Mountain Formation; Mfp, Fort Payne Chert; Mtf, Fort Payne Chert and Tuscumbia Limestone; Mt, Tuscumbia Limestone; Mgs, Ste. Genevieve Limestone and Gasper Formation [1]; Mg, Gasper Formation; Mhs, Ste. Genevieve Limestone, Gasper Formation, and Hartselle Sandstone; Mh, Hartselle Sandstone; Mb, Bangor Limestone; Mp, Pennington Formation; IPpv, Pottsville Formation.

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
A-1	Fred Hodges.....	S	.....	..	Mg	615	.....	.....	Tj	D	2	122	238	7.5	60	Barkley Spring. Estimated flow, 25 gpm 11-27-61.
A-2	Trudy Guffy	D	140	6	Mp	1,310	.....	.....	Tj	D	7	145	348	7.5	..	
A-3	S. S. Wright	D	80	6	Mp	1,240	.....	.....	Tj	D	15	82	207	7.4	..	Cased to 80 ft.

[1] The nomenclature in this report follows that of the Geological Survey of Alabama but does not necessarily follow that in use by the U.S. Geological Survey.

A-4	L. C. Campbell	S	.....	..	Mb	690	.....	.....	F	D,S	2	116	226	7.5	60	Unnamed spring. Estimated flow, less than 1 gpm 11-27-61.
A-5	O. L. Chandler	C	90	6	Mg	640	70	11-27-61	Tj	D,S	7	117	399	7.7	..	Can be pumped dry with ¾ hp pump.
A-6	Mrs. Eliza Kennamer	D	45	6	IPpv	1,300	.....	.....	Tj	D	24	54	245	6.6	..	Supply inadequate during dry season.
A-7	Benton Pence	D	.....	6	IPpv	1,320	.....	.....	Tj	D	4	18	71	6.5	..	Water contains excessive iron; water conditioner installed.
A-8	New Prospect School	D	132	6	IPpv	1,340	.....	.....	Tj	P	1	89	254	7.2	..	Supply inadequate for 115 students. Water contains excessive iron.
A-9	Thomas Dobbins	D	85	6	IPpv	1,240	30	11-27-61	Tj	D	6	23	69	6.2	..	Not cased.
B-1	E. C. Hodges	D	82	6	Mg	635	.....	.....	Tj	D,S	15	120	582	8.1	..	Water has hydrogen sulfide odor.
B-2	Mrs. A. S. Page	D	75	6	Mg	640	.....	.....	Tj	D,S	20	248	531	7.6	..	Do.
B-3	Gordon Thomas	D	27.6	6	Mg	605	8.2	11-28-61	M	D	31	178	421	7.7	62	
B-4	Ernest Elkins	D	100	6	Mg	620	.....	.....	Tj	D,S	18	183	445	7.7	..	
B-5	Ernest Jones	D	85	6	Mg	600	.....	.....	Tj	D	10	233	462	8.1	..	Can be pumped dry with ½ hp pump.
B-6	Joe W. Jones	D	101.2	6	Mg	615	41.0	11-28-61	M	S	...	...	...	...	62	Supplies 1-5 head of stock. Water has hydrogen sulfide odor.
B-7	Wannie B. Clay	D	50	6	Mg	620	.....	.....	Tj	D,S	2	113	653	8.2	..	Supplies 2 families and 6,000 chickens.
D-1	Guy Spenser	D	50	6	Mg	570	.....	.....	Tj	D	...	...	...	...	..	Supply inadequate during dry season.
D-2	W. E. Keller	D	56.7	6	Mg	620	46.8	8-10-61	N	O	...	...	...	...	..	Observation well August 1961 - August 1962.
D-3	.... do	S	.....	..	Mh	600	.....	.....	Tj	D,S	4	97	205	7.5	60	McGehee Spring. Estimated flow, less than 10 gpm 11-30-61. Water muddy after rain.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
D-4	W. E. Keller	D	60	6	Mg	580	.....	.....	Tj	D	4	128	258	7.3	..	Cased to 48 ft. Driller estimated capacity of 28 gpm. Water reported dingy sometimes.
D-5	Hebron School	D	190	6	Mg	600	.....	.....	Tj	P	21	58	863	8.5	..	Driller estimated capacity of 18 gpm. Supplies 82 students.
D-6	James A. Bolton	D	280	6	Mp	1,120	200	11-30-61	Tj	D,S	3	120	310	7.9	..	Cased to 17 ft. Cavity at 200 ft.
D-7	Frank and J. G. Walker	S	.....	..	IPpv	1,190	.....	.....	F	D,S	2	5	25	6.8	62	Unnamed spring. Estimated flow 1 gpm 11-30-61.
D-8	Buford Walker	D	100	6	Mg	620	.....	.....	Tj	D,S	3	126	272	8.0	..	Cased to 40 ft. Supply low during dry season.
D-9	Andy Hardin	S	.....	..	Mg	610	.....	.....	Tj	D	5	57	136	7.6	60	Formerly known as Cushion Spring. Supplies 4 families and store. (No. 37, Johnston, 1933.) See table 1.
E-1	Butler Brothers	D	35	6	Mg	590	10	11-28-61	Tj	S	2	136	264	7.7	..	Supplies 12,000 chickens. Reported polluted and unfit for drinking.
E-2	R. A. Clay	S	.....	..	Mg	610	.....	.....	F	S	...	...	...	...	58	Unnamed spring. See table 1.
E-3	.... do	D	70	6	Mg	620	30	11-28-61	Tj	D,S	8	180	355	8.0	..	Cased to 50 ft. Supply low during dry season.

E-4	Ted Bevel	D	178	6	....	830	.....	.....	..	...	...	...	...	...	..	Dry hole. Two other dry holes drilled here. Water supply from spring in mountain.
E-5	Kate Duncan Smith DAR School.	D	200+	6	IPpv-Mp (?)	1,210	.....	.....	N	N	...	...	...	...	..	Cased to 12 ft. Water contained excessive iron.
*E-6	James C. Campbell	S	.....	..	Mp	920	.....	.....	T	P	1	64	...	...	58	Unnamed spring. Supplies city of Grant from 12,000 to 16,000 gpd. Water is chlorinated. See table 1.
E-7	H. J. Whitaker	D	143	6	Mg	600	53	11-30-61	Tj	D,S	...	...	...	...	..	Cased to 22 ft. Supply low during dry season. Water has hydrogen sulfide odor.
E-8	A. S. Prince or W. D. Davis.	S	.....	..	Mg	590	.....	.....	Tj	D,S	3	40	91	7.3	56	Davis Spring. Water is muddy after rain. See table 1.
E-9	D. R. Click	D	64	6	Mb	600	26	11-28-61	Tj	D	18	184	390	7.9	..	
E-10	Mt. Pleasant School	D	183	6	IPpv-Mp (?)	1,120	150	11-28-61	Tj	P	2	18	57	7.4	..	Water at 178 ft. Driller estimated capacity of 6 gpm. Supplies 46 students. Water contains excessive iron.
E-11	C. E. Cooper	D	32	6	IPpv	1,105	24	11-28-61	Tj	D	13	47	208	4.8	..	Supply inadequate during dry season.
E-12	A. G. Sutton	D	.....	6	IPpv	1,245	.....	.....	Tj	D	3	18	60	7.0	..	Do.
E-13	Mids Roberts	D	70.6	6	IPpv	1,245	14.3	3-15-56	M	D	4	74	...	...	..	Cased to 5 ft. Driller estimated capacity of 3 gpm.
E-14	Donald McMinn	D	160	6	IPpv	1,145	25	11-29-61	Ts	D	3	80	293	7.7	..	Cased to 16 ft. Water at 44 ft. Lost water at 165 ft; cemented zone where water was lost. Driller estimated capacity of 2 gpm. Supply inadequate. Water contains excessive iron.
E-15	Thomas Martin	D	250	6	IPpv-Mp	1,180	29.3	11-29-61	N	N	...	...	...	...	..	Cased to 18 ft. Well abandoned.
E-16	Ed Lee Harding	D	60	6	IPpv	1,140	30	11-28-61	Tj	D	2	24	65	6.3	..	
E-17	R. L. Lewis	D	78.5	6	IPpv	1,200	10.7	11-28-61	N	N	...	...	...	...	..	Well abandoned.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (^{0} F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
E-18	W. A. Bridges	D	40	6	IPpv	1,140	.....	.....	Tj	D,S	6	19	66	6.4	..	Supplies 1 family and large chicken house.
E-19	John Hatcher	D	79	6	Mb	605	.....	.....	Tj	D	...	...	...	...	..	Cased to 20 ft. Driller estimated capacity of 8 gpm. Used only on weekends. See table 6.
F-1	Priscilla McCamy	S	.....	..	Mb	680	.....	.....	Tj	D	3	114	218	7.4	61	Unnamed spring. See table 1.
F-2	Gordon King	D	160	6	IPpv	1,290	100	11-27-61	Tj	D	7	30	109	7.2	..	Water at 160 ft. Supplies 2 families.
*F-3	Kate Duncan Smith DAR School.	D	90	6	Mg	610	.....	.....	T	P,S	...	...	...	...	..	Water at 79 ft. Pumped 160 to 190 gpm for 24 hrs during summer of 1960. Supplies 15,000 gpd for school, dairy, and stock.
F-4	....do.....	D	700	6	IPpv Mp Mb	1,225	215	6-16-49	N	N	...	...	...	...	..	Reported bail tests: depth 140 ft, water level 15 ft, capacity 3 gpm; depth 174 ft, water level 15 ft, capacity 8 gpm; depth 233 ft, water level 215 ft, capacity 10 gpm. Well abandoned. See table 6.
F-5	....do.....	D	.....	6	IPpv (?)	1,230	.....	.....	Tj	S	...	...	...	...	..	Supplementary supply for barn.

F-6	J. H. Selvage.....	D	119.0	6	IPpv	1,230	3.4	8-11-61	N	N	...	...	...	...	..	Observation well, August 1961 to July 1962. Formerly supplied 3 or 4 families.
F-7	Bertha Burroughs.....	D	55.5	6	IPpv	1,205	3.7	11-27-61	M	D	17	25	122	8.0	..	Drilled in 1907. Supply inadequate during dry years.
F-8	R. L. Lackey.....	D	52.7	6	IPpv	1,240	6.1	3-15-56	M	D	2	30	...	...	..	Cased to 6 ft.
F-9	Charlie Whitaker.....	D	50	6	IPpv	1,240	8.5	3-15-56	M	D,S	1	38	...	...	..	Do.
F-10	O. W. Burroughs.....	D	48	6	IPpv	1,240	8.8	3-15-56	Tj	D	1	40	...	...	..	
F-11	R. P. Means.....	D	39.7	6	IPpv	1,250	33.3	11-17-61	M	D	...	...	...	...	..	Supply inadequate.
F-12	Dewey Mefford.....	D	425.0	6	Mb	1,230	270.0	11-17-61	N	N	...	...	...	...	..	Bail test indicated supply inadequate for domestic use.
F-13	....do.....	D	128	6	IPpv	1,240	40	11-17-61	Tj	D	12	42	116	6.5	..	Supplies 2 families.
F-14	W. B. Word.....	D	75	6	Mhs	620	15.8	11-16-61	Tj	D	3	95	191	7.8	..	Supplies 3 families and store.
F-15	George G. Baker.....	D	190	6	Oc	610	25	11-16-61	Tj	D	...	...	...	...	..	Cased to 40 ft. Water at 50 ft. Driller estimated capacity of 2 gpm. Used only on weekends.
F-16	Milford Cooper.....	D	340	6	IPpv (?)	1,220	.....	.....	Pv	D	1	70	...	...	..	Bailing lowered water level to 100 ft.
F-17	Armon Click.....	D	138.0	6	IPpv	1,165	85.4	11-17-61	N	N	...	...	...	...	..	Drilled in 1957. Reported to have been pumped dry after 1½ years. Water contained excessive iron.
F-18	Burlun Jackson.....	D	89	6	IPpv	1,160	.....	.....	Tj	D,S	3	101	230	7.1	..	
F-19	Ed Hill.....	D	.....	6	IPpv	1,150	.....	.....	Tj	D	3	16	48	7.0	..	Water contains excessive iron.
F-20	Elden Barnes.....	D	150	6	IPpv	1,280	80	11-27-61	Tj	D	1	62	165	7.8	..	Cased to 4 ft.
F-21	Anna Dennis.....	D	542.5	6	IPpv Mp Mb	1,160	340.0	2- 9-62	N	N	...	...	...	...	..	Reported depth, 570 ft. Cased to 5½ ft. Water from 125 to 175 ft. Water has hydrogen sulfide odor and natural gas. Electric log in files of U.S. Geol. Survey.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
F-22	A. H. Barnes	Du	16.0	36	Mhs	660	12.5	11-16-61	Tj	D,S	15	145	341	7.2	..	Not cased. Supply inadequate during dry season. Water muddy after rain.
F-23	Vera Spurgeon	Du	12	24	Mhs	605	8	11-16-61	Tj	D	4	14	49	6.4	..	Tile casing, total depth.
F-24	Bethel Hutchinson	D	49	6	Oc	610	.....	.....	Tj	D,S	17	221	511	7.7	..	Cased to 19 ft. Supplies 1 family and large chicken house. Water has hydrogen sulfide odor.
F-25	W. H. Selvage	D	86	6	IPpv	1,160	35	11-16-61	Tj	D	2	103	244	7.7	..	Cased to 9 ft. Driller estimated capacity of 30 gpm. Supplies 1 family and service station.
F-26	Elbert Smith	D	78	6	IPpv	1,160	30	11-16-61	Tj	D,S	8	32	112	6.9	..	Cased to 78 ft, finished with perforated casing.
F-27	Ed Whitten	D	52	6	Mhs	620	17	11- 8-61	Tj	D	...	...	...	...	..	Cased to 52 ft. Driller estimated capacity of 40 gpm.
F-28	Gordon D. Zuck	D	86	6	Oc	610	35	10-30-61	Tj	D	...	...	...	...	..	Cased to 40 ft. Water at 83 ft. Driller estimated capacity of 12 gpm. See table 6.
F-29	....do	D	108	6	Oc	610	40	10-30-61	Tj	D	...	...	...	...	..	Cased to 50 ft. Water at 72 ft, 4 gpm; 107 ft, 20+ gpm. Water has hydrogen sulfide odor. See table 6.

F-30	Ross Hodges	S	.....	..	Oc	640	.....	.....	Tj	D	2	191	407	7.6	62	Unnamed spring. See table 1.
G-1	J. W. Martin	D	65	6	Mfp (?)	610	20	10-31-61	Tj	D	7	188	536	7.8	..	Supplies 2 families and store.
G-2	Labon McCormick	S	.....	..	Oc	620	.....	.....	Tj	D,S	5	122	262	7.5	64	Unnamed spring. Estimated flow less than 1 gpm, 10-27-61. Supplies 2 families and stock.
*G-3	J. B. Leslie.....	D	700	6	Oc (?)	615	.....	.....	Tj	S	...	...	...	...	..	Drilled as oil test from 295 to 700 ft.
G-4	M. D. Sandridge.....	Du	14.1	36	Mt	650	9.8	10-31-61	M	D	4	9	33	7.4	63	Not cased. Supply inadequate during dry season.
G-5	Lynn Godwin	D	105	6	IPpv	1,180	45	10-26-61	Tj	D	23	25	144	6.8	..	Cased to 8 ft.
H-1	Claude Godwin.....	D	70	6	IPpv	1,140	68	10-26-61	Tj	D	10	13	105	6.3	..	Supply inadequate during dry season.
H-2	Hoyt Bryant	D	100	6	IPpv	1,090	.....	.....	Tj	D,S	3	43	108	6.5	..	Water contains excessive iron.
H-3	Emerson E. Wilborn...	S	.....	..	Mgs	630	.....	.....	Tj Pv	D,S	9	122	240	7.2	62	Unnamed spring. Estimated flow, less than 10 gpm 10-31-61. Supplies 2 families.
H-4	M. W. Ganney.....	D	46.7	6	IPpv	1,105	22.2	10-20-61	M	D	7	15	67	...	..	Water contains excessive iron.
H-5	Odell Bearden	D	141.0	6	IPpv	1,120	21.9	10-20-61	N	N	...	...	...	...	..	Cased to 6 ft. Well abandoned.
H-6	Poplar Springs School.	D	.....	6	IPpv	1,150	25.2	10-20-61	Tj	N	...	...	...	...	..	Well abandoned.
H-7	Wes Slayton	D	43.9	6	IPpv	1,120	27.2	10-20-61	M	D	36	10	212	...	61	
H-8	Sidney Masters.....	Du	45	36	IPpv	1,135	25	10-20-61	Tj	D	4	10	44	5.8	62	Not cased. Supplies 2 families.
H-9	Quinton Bearden	D	108.7	6	IPpv	1,130	49.7	10-20-61	M	D	4	52	133	...	61	Water contains excessive iron.
H-10	Charlie McGuire	D	38	6	IPpv	1,180	21	10-23-61	Tj	D	4	9	39	5.7	..	Cased to 8 ft.
H-11	P. E. Galloway	D	50	6	IPpv	1,120	30.7	10-23-61	Tj	D,S	12	30	127	5.7	62	Water contains excessive iron.
I-1	Five Points School ..	D	95	6	Mt	680	45	10-26-61	Tj	P	2	24	54	6.3	..	Supplies 26 students.
I-2	Girl Scout Council Camp Trico.	D	120	6	Oc	.....	.....	.....	Tj	P	...	...	...	...	..	

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
I-3	Girl Scout Council Camp Trico.	D	100	6	Oc	.....	24.4	3-10-62	Tj	P	...	...	...	...	60	
I-4	Harry Rutland	D	83	6	Mhs	660	50	11- 8-61	Tj	D	6	169	320	7.7	..	Cased to 83 ft. Water at 83 ft. Driller estimated capacity of 8 gpm. Supplies store and church. See table 6.
I-5	W. B. McDonald.....	S	.....	..	Mp	820	.....	.....	F	P	2	110	212	7.7	60	McDonald Spring. Estimated flow 50 gpm 11-16-61. Supplies 13 families at Columbus City. (No. 41, Johnston, 1933.)
I-6	Alabama State Highway Dept. (Camp Guntersville).	D	100	6	Mb	650	.....	.....	Pv	Ind	9	162	360	7.8	..	Used at Concrete Pipe Plant. Water has hydrogen sulfide odor.
I-7	....do.....	D	80	6	Mb	620	.....	.....	T	P	7	212	399	8.0	..	Supplies 56 persons. Water has slight hydrogen sulfide odor.
I-8	S. A. Edwards	D	200	6	Oc	605	15	11-16-61	Tj	P	5	176	308	7.6	..	Cased to 196 ft. Supplies up to 40 units—cottages and trailers (Camp Ossa-Win-Tha) Water is chlorinated.
I-9	Simp Vain.....	D	87	6	Mt	670	67	10-27-61	Tj	D,S	4	15	39	6.1	..	Cased to 87 ft. Supplies 2 families, 2 chicken houses, 100 hogs, and 100 sheep.

I-10	M. G. Hodges, Sr.....	D	104	6	Mt	680	64	10-31-61	Tj	D,S	1	109	215	7.1	..	Supplies 1 family and large chicken house.
I-11	Dr. R. L. Meharg	D	84	6	Mt	640	.....	.....	Tj	D	1	20	78	6.6	..	Cased to 84 ft, finished with perforated casing. Water at 68 ft.
I-12	Tom Deason.....	D	80	6	Mt	610	.....	.....	Tj	D	2	36	88	6.7	..	Cased to 80 ft. Supplies 3 cottages during summer.
I-13	W. D. Newman	D	100	6	Oc	640	40	11- 8-61	Tj	D	3	181	333	7.6	..	Cased to 35 ft. Water at 99 ft. Driller estimated capacity of 1 gpm.
I-14	Bill Plemons	D	150	6	Oc	640	40	11- 8-61	Tj	D	4	196	371	7.9	..	Cased to 35 ft. Water at 150 ft. Driller estimated capacity of 7 gpm. See table 6.
I-15	J. S. Davis.....	D	168	6	Oc	600	8	11- 8-61	Tj	N	...	...	...	...	..	Cased to 12 ft.
I-16	George Hardy.....	D	250	6	Oc	620	17	11- 8-61	N	N	...	...	...	...	..	Cased to 18 ft. Driller estimated capacity of 20 gpm. Water has hydrogen sulfide odor.
I-17	State of Alabama Little Mountain State Park.	D	63	6	Mb	600	2	10-26-61	Tj	P	3	215	329	7.1	..	Cased to 63 ft, finished with perforated casing. Water at 63 ft. Supplies up to 500 campers. Water is chlorinated.
I-18	Mack Moss	D	86	6	Mb	610	.....	.....	Tj	P	3	98	302	7.1	..	Town Creek Fishing Camp. Cased to 30 ft. Driller estimated capacity of 10 gpm. Supplies 20 families in season. Water is chlorinated.
I-19	Mack Orr.....	D	68	6	IPpv	1,110	40.5	10-20-61	Tj	D	7	8	52	...	..	Cased to 3 ft. Supply low during dry season.
I-20	Bishop Melton	S	.....	..	Mp	840	.....	.....	F	D	11	74	261	6.7	61	Unnamed spring. Estimated flow less than 10 gpm 10-26-61. Supplies 2 families and store.
I-21	J. L. Burgess	D	62	6	IPpv	1,040	20	10-20-61	Tj	D,S	12	17	92	...	..	Cased to 9 ft.
J-1	Leona Rallings	S	.....	..	Mb	600	.....	.....	F	D	3	39	98	8.1	55	Honeycomb Spring. See table 2. (No. 40, Johnston, 1933.)

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (^{0} F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
J-2	Jenny Stewart	D	68	6	Mb	630	.....	.....	Tj	D,S	2	138	271	7.9	..	Cased to 12 ft.
J-3	J. R. Whitaker	D	100	6	Mb	630	.....	.....	Tj	D	...	...	...	...	..	Oil test well. Plugged at 100 ft, developed for water supply. (No. 96, Toulmin, 1945; p. 339-340, McGlamery, 1955.)
J-4	Leon Hombuckle	D	64	6	Mb	600	.....	.....	N	N	...	...	...	...	..	Cased to 25 ft. Water at 32.5 and 38 ft. Driller estimated capacity of 20 gpm. Plug in top of casing. See table 6.
J-5	Dr. Moody Walker	D	.....	6	Mb	600	.....	.....	Tj	P	2	116	241	7.8	..	Honeycomb Boat Dock and Trailer Park. Supplies at least 8 trailers and cafe.
J-6	Gordon Province	D	70	6	Mb	620	50	12- 4-61	Tj	P	...	...	...	...	..	Mirror Lake Motel. Cased to 20 ft. Water at 62 ft. Supplements spring to supply motel, cafe, and 2 houses.
J-7	Mrs. Edgar Davis	D	83	6	Mg	610	40	2- 2-62	Tj	D	2	170	315	8.1	..	Cased to 83 ft. Finished with perforated casing. Driller estimated capacity of 10 gpm.
J-8	Thomas Martin	D	50	6	Mb	620	.....	.....	Tj	P	2	130	199	7.9	..	Supplies cafe.
J-9	Henryville Methodist Church.	D	137	6	Oc	620	30	11- 8-61	Tj	D	12	248	448	7.6	..	Cased to 30 ft. Water at 137 ft. Driller estimated capacity of 7 gpm. Supplies church and 2 houses.

J-10	J. W. Walls	D	100	6	Mhs	685	70	11- 8-61	Tj	D,S	3	120	229	7.6		Cased to 80 ft. Water at 90 ft. Cannot be pumped dry with ¾ hp pump.
J-11	William Kennedy	D	150	6	IPpv	1,080			Tj	D						Driller estimated capacity of 2 gpm. Lost water at 150 ft, plugged to develop shallow water. See table 6.
J-12	Sam Walker	D	150	6	Mhs	660			Tj	D	3	164	294	7.7		
J-13	Ralph Smith	D	33	6	Oc	620			Tj	D	9	234	431	7.5		Cased to 17 ft. Cavity from 30 to 33 ft. Could not lower water level by bailing.
J-14	Kayo Oil Co	D	121	6	Oc	605	10	11- 8-61	Tj	D	16	160	438	7.7		Casing: 6¼-in to 20½ ft; 6-in from surface to 29½ ft. Cased off gasoline in upper part of formation. Water at 118 ft. Water contains hydrogen sulfide odor.
J-15	Hughes Cambron	D	97.2	6	Oc	620	31.8	8-10-61	N	N						Observation well, August 1961 to August 1962. Original depth 200 ft. Water has hydrogen sulfide odor.
J-16	Claysville Junior High School.	D		6	Oc	610			Tj	P						Supplies drinking water supplementing J-17; supply inadequate. Water has hydrogen sulfide odor.
J-17	do	D		6	Oc	610			Tj	P	6	110	234	7.5		Supply inadequate. Water has hydrogen sulfide odor.
J-18	Lawrence Brown	D	189	6	IPpv	1,065	20	1-30-62	Tj	D,S	2	52	106	7.7		Supplies 2 families.
J-19	M. C. Gilbreath	S			Mb	690			F	P	2	42	88	7.7	58	Street Bluff Fishing Camp. Unnamed spring. Estimated flow 1,000 gpm 1-30-61. Supplies cafe and trailer park. Water is chlorinated.
J-20	A. Ray Jones	D	126	6	Oc	620	16	11- 7-61	Tj	D	20	34	739	8.3		Cased to 20 ft. Driller estimated capacity of 4 gpm. Water has hydrogen sulfide odor.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance micromhos at 25° C)	pH		
*J-21	Guntersville Yacht Club.	D	93	6	Oc	600	12	11- 7-61	Ts	D	22	246	454	8.1	60	Cased to 17 ft. Driller estimated capacity of 30 gpm.
J-22	Camp Cha-La-Kee Huntsville YMCA.	D	70	6	Mb	640	.....	.....	Tj	P	...	...	...	...	..	Cased to 35 ft. Supplies 150 campers.
K-1	G. W. Jones and Sons.	S	.....	..	Mg	580	.....	.....	F	S	5	94	201	7.8	60	Daniel Spring. See table 1.
K-2	....do.....	D	65.0	6	Mg	630	50.3	11-30-61	M	D	...	...	...	...	..	Inadequate supply for 1 family during dry season. Water muddy if bailed fast.
K-3	....do.....	D	35.3	6	Mg	600	19.3	12- 4-61	N	N	...	...	...	...	..	
K-4	Dr. B. G. May	S	.....	..	Mg	575	.....	.....	F	D	...	...	...	...	58	Beech Spring. Estimated flow, 100 gpm 5-9-62. Supplies 3 families.
K-5	G. W. Jones and Sons.	D	74.3	6	Mg	620	38.6	11-30-61	Tj	D	14	174	363	8.1	..	Supplies 2 families.
K-6	....do.....	D	67.6	6	Mg	615	33.7	11-30-61	M	D	2	162	300	8.1	62	Inadequate supply for 1 family during dry season. Reported sulfurous taste after heavy rain.
K-7	....do.....	D	107.0	6	Mg	600	13.6	3-22-62	N	N	...	...	...	...	..	
*K-8	U.S. Government Tennessee Valley Authority—Guntersville Dam.	S	.....	..	Mg	585	.....	.....	T	P	2	78	168	7.8	63	Unnamed spring. Supplies rest rooms and drinking fountains in recreational area and cafe. Supplied 3,400 to

																7,500 gpd during November 1961. Water muddy after rain. Equipped with 15 gpm sand filter. Water is chlorinated. See table 1.
K-9	D. H. Bunch	D	63.4	6	IPpv	1,040	.8	12-18-61	M	D	95	33	546	...	..	Cased to 8 ft. Supply low during dry season. Water muddy after hard rain.
K-10	Milton DeArmond	D	89	6	IPpv	1,040	.....	.....	Tj	D	5	23	83	6.8	..	
K-11	Homer Lee Davis	D	54	6	IPpv	1,030	.....	.....	Tj	D	2	3	117	7.5	..	Water contains excessive iron.
K-12	Robert Reed	D	70	6	IPpv	1,020	10	12-18-61	Tj	D,S	...	...	...	...	..	
K-13	Wheeler Keeton	D	106.7	6	IPpv	1,040	14.1	1-30-62	M	D	...	...	...	...	..	Cased to 4 feet. Driller estimated capacity of 3 gpm. Used to supplement spring.
K-14	Jack Snow	D	42.3	6	IPpv	1,000	13.1	12- 5-61	M	D	58	39	318	6.7	..	Supply inadequate for pump.
K-15	Joe B. Brooks	D	65	6	IPpv	1,005	25	12-18-61	Tj	D	3	20	66	7.3	..	Water contains excessive iron.
K-16	Union Grove School	D	217	6	IPpv (?)	1,030	50	12- 5-61	Ts	P	2	58	257	8.1	..	Supplies 370 students. Water contains excessive iron.
K-17	E. T. Williams	D	150	6	IPpv	1,040	30	3-13-56	Tj	D	2	68	...	...	..	Cased to 36 feet.
K-18	Fanny Dickey	Du	23.2	36	IPpv	990	1.4	12-18-61	M	D	16	33	180	6.9	..	Not cased.
K-19	Lloyd Key	D	82	6	IPpv	1,020	42	12-18-61	Tj	D	3	10	37	6.6	..	Cased to 20 ft. Water from 36 to 38 ft. Driller estimated capacity of 2 gpm.
K-20	Gladys Anderson	D	49.0	6	IPpv	1,090	40.8	1-30-62	M	D	100	52	533	7.2	..	Cased to 6 ft. Water contains excessive iron.
L-1	John R. Carter	S	.....	..	IPpv	1,040	.....	.....	Tj	D	6	12	52	6.2	61	Unnamed spring. Estimated flow, less than 10 gpm, 12-5-61.
L-2	Woodrow Gord	D	30	6	IPpv	1,105	16	12- 5-61	Tj	D	5	89	204	7.8	..	Supplies 2 families. Water contains excessive iron.
L-3	Clifton Black	D	63	6	IPpv	1,180	18	12-19-61	Tj	D	...	...	...	...	..	Cased to 28 ft. Water contains excessive iron.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
L-4	Midway School	D	186	6	IPpv	970	.....	.....	Tj	P	1	20	55	7.1	..	Supply inadequate for 75 students; used to supplement spring. Water contains excessive iron and has hydrogen sulfide odor.
L-5	Abner King	D	84	6	IPpv	1,065	.....	.....	Tj	D,S	...	...	...	...	..	Cased to 6 ft. Supplies 2 families.
L-6	Alfred King	D	80	6	IPpv	965	.....	.....	Tj	D	4	105	300	8.1	..	
L-7	M. P. Mead	C	36	36, 6	IPpv	1,025	18	12- 5-61	Tj	S	2	4	33	6.9	..	Dug, 36-in to 18 ft; drilled, 6-in to 36 ft. Not cased. Water sometimes muddy.
L-8	Jessie Jackson	D	151	6	IPpv-Mp (?)	940	.....	.....	Tj	D	445	104	...	7.8	..	Cased to 30 ft. Water has hydrogen sulfide odor. See table 6.
L-9	H. O. Tyler	D	58	6	IPpv	940	+ .7	12-19-61	F, Tj	D	...	...	...	...	..	Cased to 30 ft.
L-10	T. H. Dun	D	99	6	IPpv	960	30	12-19-61	Tj	D	3	144	292	...	..	Cased to 15 ft. Water at 56 ft.
L-11	Albert Black	D	604.5	8	....	990	87.4	2- 9-62	N	N	...	...	...	...	..	Oil test well. Drilled 820 ft (p. 345-347, McGlamery, 1955). Electric log in files of U.S. Geol. Survey.

L-12	J. W. Rowe	D	62	6	IPpv	1,160	20	12-19-61	Tj	D,S	4	83	208	7.8	..	Cased to 8 ft.
L-13	T. H. Patty	D	80	6	IPpv	1,070	.....	.....	Tj	D	2	29	89	7.2	..	
L-14	Buzz Oil Co	D	200	6	IPpv (?)	1,000	.....	.....	Tj	D	...	...	...	...	..	Supplies 1 family and service station.
L-15	Mrs. D. M. Monow	Du	50	36	IPpv	960	.....	.....	Tj	D	32	27	182	7.5	..	Cased to 50 ft. Water contains excessive iron.
L-16	Narrell Brothers Cafe	D	207	6	IPpv (?)	1,100	77	12-20-61	Tj	P	4	15	46	7.5	..	Cased to 100 ft. Water at 190 ft. Supplies service station and cafe. Water contains excessive iron in wet weather.
L-17	Wyman King	D	85	6	IPpv	1,020	50	12-20-61	Tj	D	...	...	...	...	..	Supplies 1 family and store. Water contains excessive iron.
L-18	G. W. Mobbs	Du	25.6	48	IPpv	1,040	6.7	12-20-61	Tj	D	...	...	...	...	..	Not cased.
M-1	Emmett Bennett	D	70	6	IPpv	1,045	.....	.....	Tj	D	...	...	...	...	..	
M-2	H. N. Moore	D	72	6	IPpv	1,060	.....	.....	Tj	D	3	9	133	7.4	..	Water contains excessive iron; water conditioner installed.
M-3	Aaron Casey	Du	14.0	48	IPpv	970	3.8	12-20-61	M	D	...	...	...	...	..	Not cased.
M-4	Ruth School	D	50	6	IPpv	1,060	25	12-20-61	Tj	P	2	84	191	7.2	..	Supplies 53 students.
M-5	Buel E. Weaver	D	117	6	IPpv	1,020	75	12-20-61	Tj	D	...	...	...	...	..	Cased to 20 ft; water at 60 ft.
M-6	Eunice Grantford	D	34.2	6	IPpv	980	18.4	12-20-61	M	D	...	...	...	...	..	
M-7	Ezeal Head	D	100	6	IPpv	1,090	.....	.....	Tj	D,S	17	21	118	7.0	..	
M-8	City of Arab	D	342	8	IPpv	1,121	45	5-26-52	T	P	4	62	...	6.9	64	Cased to 100 ft; water at 146 ft, 244 ft, and various places on to bottom. Drawdown 110 ft after 24 hrs pumping 120 gpm, May 1952. See table 6.
*M-9	....do	D	320	6	IPpv	1,105	47.9	1-26-56	N	N	...	...	...	...	..	Cased to 60 ft; water at 90 ft. Reported capacity 120 gpm. Well abandoned in 1955.
M-10	....do	D	302	10	IPpv	1,095	80	10-27-55	T	P	4	58	...	7.3	61	Cased to 51 ft. Reported capacity 150 gpm.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
M-11	City of Arab	D	47.8	6	IPpv	1,075	7.4	8-21-61	N	O	...	...	...	...	..	Observation well, August 1961 to August 1962.
M-12	C. C. Cobb	D	66	6	IPpv	1,025	.....	.....	Tj	D,S	2	80	...	...	..	Cased to 10 ft.
*M-13	City of Arab	D	325	6	IPpv	1,100	56	6-11-53	T	P	...	...	...	...	63	Cased to 40 ft; water at 75, 110, 135, and 185 ft. Reported capacity 120 gpm. See tables 5 and 6.
M-14	Arab Nursery Co.	D	125	6	IPpv	1,080	.....	.....	Ts	Irr	2	28	128	7.6	..	
M-15	City of Arab	D	385	8	IPpv Mp	1,080	53.6	1-26-56	N	N	4	24	...	7.3	62	Observation well, January 1962 to August 1962. Cased to 100 ft. Pumped 24 hrs at 85 gpm, August 1952. Electric log in files of U.S. Geol. Survey. See table 6.
M-16	Dr. Barnard	Du	34.9	36	IPpv	1,070	12.5	12-20-61	M	D	13	52	206	7.0	..	Not cased.
M-17	J. R. Barnes	D	49	6	IPpv	1,070	29	12-20-61	Tj	D,S	...	...	...	...	..	
M-18	Lowell H. Hill	D	59	6	IPpv	995	26.9	3-12-56	Tj	Irr	1	82	...	...	..	Cased to 8 ft. Reported capacity 100 gpm. Supplies nursery.
M-19	John Earl Smith	D	70	6	IPpv	1,090	30	12-20-61	Tj	D,S	6	31	95	7.2	..	Supplies 1 family and large chicken house. Water contains excessive iron.

N-1	Curley King	D	250	6	Ppv-Mp	1,000	.....	.....	Tj	D	130	114	587	7.7	..	Water contains excessive iron. Water conditioner installed.
N-2	Ray Dodd	D	58	6	Ppv	1,000	4	12- 5-61	Tj	P	11	32	135	7.2	..	Cased to 2 ft. Supplies 6 houses, cafe, and garage.
N-3	L. L. Scott	D	60	6	Ppv	1,010	.....	.....	Tj	D,S	24	22	167	7.0	..	Cased to 10 ft. Supply low during dry season.
N-4	Ed White	D	70	6	Ppv	1,010	.....	.....	Tj	D	2	16	51	7.4	..	
N-5	H. L. Turner	D	36	6	Ppv	1,015	18	2- 2-62	Tj	D,S	2	8	33	7.5	..	Water contains excessive iron.
N-6	D. H. Blackman	Du	23	48	Ppv	980	18	1- 4-62	Tj	D	...	...	...	...	..	Not cased. Supplies 2 families. Well has gone dry in dry years.
N-7	M. B. Solley	D	94.0	6	Ppv	1,040	10.8	2- 2-62	N	N	...	...	...	...	..	
N-8	Mrs. M. A. Terrell	D	60	6	Ppv	1,040	15	2- 2-62	N	N	...	...	...	...	..	
N-9	Fred Carter	D	51	6	Ppv	1,040	15	2- 2-62	Tj	D	...	...	...	...	..	Cased to 12 ft.
N-10	Grassey Junior High School	D	85	6	Ppv	1,050	20.9	1- 4-62	N	N	...	...	...	...	..	Supplied 350 students until 1960. Water contained excessive iron.
N-11	J. M. Daniell and Son Nursery Co.	D	32	6	Ppv	1,010	14	2- 2-62	Tj	Irr	19	96	296	7.6	..	Not cased. Cement foundation at surface. Cannot pump dry with $\frac{1}{3}$ hp pump. Water contains excessive iron.
N-12	Will Shelton	D	86	6	Ppv	1,060	14.7	2- 2-62	N	N	...	...	...	...	..	Cased to 6 ft.
N-13	Jack Whitaker	D	70	6	Ppv	1,000	.....	.....	Tj	D,S	19	50	171	6.0	..	Supplies 1 family and 2 chicken houses. Water contains excessive iron.
N-14	James Douglas	D	42	6	Mtf	610	.....	.....	Tj	P	3	137	253	8.0	..	Cased to 40 ft. Water at 42 ft. Supplies cafe and store at Beech Creek Fishing Camp.
N-15	Mrs. Harry McGee	S	.....	..	Smn	660	.....	.....	N	D	2	25	52	7.4	58	Unnamed spring. Estimated flow less than 10 gpm 1-30-62.
N-16	Robert Johnson	D	100	6	Oc	640	40	1-31-62	Tj	D	20	172	350	8.0	..	

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
N-17	Carl Wright	Du	33.3	48	IPpv	1,060	5.6	1- 4-62	Tj	D	...	...	...	...	..	Not cased. Supply low during dry season. Water contains excessive iron; water conditioner installed.
N-18	Willie Pool	D	82	6	IPpv	1,080	30	1- 4-62	Tj	S	2	3	29	5.8	..	Cased to 40 ft. Supplies 2 chicken houses. Water contains excessive iron.
N-19	Edna Mae Bowling	Du	31.7	48	IPpv	1,080	12.3	1- 4-62	Tj	D,S	...	...	...	...	..	Not cased. Supplements city water supply. Well goes dry in dry years.
N-20	Lionel Leak	D	65	6	IPpv	1,040	35	1- 4-62	Tj	D	16	18	102	6.5	..	Cased to 21 ft. Water contains excessive iron.
N-21	Hollis Martin	D	108	6	Oc	615	.....	.....	Tj	D,S	13	99	358	7.8	..	Solution cavity from 103 to 108 ft.
N-22	Mrs. Henry Wade	S	.....	..	Oc	620	.....	.....	F	D	1	158	296	8.0	58	Unnamed spring. See table 2.
O-1	Edna Wood	D	61	6	Mhs	615	15	1-30-62	Tj	D	4	126	247	7.9	..	Cased to 55 ft; water at 58 ft.
O-2	Jack Smith	D	89	6	Mhs	610	.....	.....	Tj	P	4	116	227	7.7	..	Cased to 35 ft. Solution cavity from 50 to 89 ft. Supplies store, cafe, and apartment house. See table 6.
O-3	Rub Fuell	D	103	6	Mhs	600	0	11-17-61	Tj	D	8	120	247	7.8	..	Cased to 70 ft. See table 6.
O-4	State of Alabama or Warrenton School.	S	.....	..	Mb	606	.....	.....	Tj	P	2	65	123	7.7	59	Taylor Spring. Seven pumps in spring. Supplies Fish Hatchery, 170 students, and about 10 families. See table 1.

O-5	State of Alabama.....	S	.....	..	Mb	620	.....	.....	Tj	P	2	75	153	7.7	58	Smith Spring. Two pumps in spring. Supplies about 10 families. See table 1.
O-6	Dr. Alvis	D	300	6	Oc	615	25	1-15-62	Tj	Irr	...	...	...	...	..	Cased to 15 ft; water at 299 ft. Drawdown 20 ft after 1 hr pumping with 3 hp jet pump, June 1956. Pumps 24 hrs per day during growing season to irrigate small truck garden. Water has hydrogen sulfide odor. See table 6.
O-7	City Ice Co.....	D	100	6	Mt	600	14	11- 1-61	T	Ind	20	157	433	7.4	62	Cased to 39 ft; water from 50 to 100 ft. See table 6.
*O-8	Allied Mills Inc.....	D	289	10	Mh Mgs	600	10.5	4-29-59	T	Ind	11	144	...	7.1	62	Cased to 171 ft. Pumped 24 hrs at 350 gpm April 1959. See table 5.
*O-9	....do.....	D	278	10	Mh Mgs	600	12.0	4-30-59	T	Ind	...	...	...	...	62	Pumped 24 hrs at 700 gpm April 1959. Electric log in files of U.S. Geol. Survey. See table 5.
O-10	....do.....	D	384	10	Mh Mgs	600	.....	.....	N	N	...	...	...	...	..	Well abandoned. Screen used to keep out sand, reduced capacity to 100 gpm. Electric log in files of U.S. Geol. Survey. See table 5.
O-11	....do.....	D	260	10	Mh Mgs	620	18.5	8- -59	T	Ind	...	...	...	...	..	Cased to 200 ft; water at 211 and 254 ft. Drawdown 72 ft after 24 hrs pumping 425 gpm August 1959. Wells O-8, O-9, and O-11 combined supply about 1 mgd. Cooling water is chlorinated and boiler water is run through softner. Combined water quality by Betz Lab.: total hardness 149, calcium 134, magnesium 15, pH 7.8. See table 6.
*O-12	Boaz Spinning Mills ..	D	130	6	Mfp	610	15	3- -53	T	Ind	...	...	...	...	63	Cased to 130 ft. Reported no apparent drawdown after 4 days pumping 240 gpm April 1953. See table 6.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
O-13	....do.....	D	124	6	Mfp	610	12.2	3-16-56	N	O	2	58	...	...	..	Cased to 124 ft. See table 6.
O-14	....do.....	D	98	6	Mfp	610	15	3- -53	T	Ind	1	40	...	...	..	Cased to 98 ft. See table 6.
O-15	....do.....	D	131	6	Mfp	610	15	3- -53	T	Ind	...	...	...	...	63	Cased to 131 ft.
O-16	Mrs. Buck King.....	D	100	6	Mfp (?)	640	.....	.....	Tj	D	1	77	139	7.6	..	
O-17	Sorters Cross Roads School.	D	38.7	6	Oc	615	5.8	2- 2-62	N	N	...	...	...	...	..	
O-18	Paul Sortor.....	D	77	6	Mfp	660	.....	.....	Tj	D	1	4	18	6.4	..	Cased to 70 ft.
O-19	Val Monte Resort.....	D	305.1	6	Mgs	600	6.6	2- 8-62	N	O	...	...	...	...	..	Cased to 40 ft. Driller estimated capacity of 18 gpm. Water has hydrogen sulfide odor. Electric log in files of U.S. Geol. Survey.
O-20	Harry Rutland.....	D	118	6	Mgs	605	30	11- 7-61	Tj	P	5	82	167	7.6	..	Cased to 18 ft. Driller estimated capacity of 2 gpm. Supplies service station and trailer park.
O-21	Fulmer Webb.....	D	250	6	Mgs	620	30	11- 7-61	Tj	P	4	156	298	7.8	..	Cased to 40 ft; 6-in solution cavity at 250 ft. Driller estimated capacity of 60 gpm. Supplies 12 families.
O-22	Glen Vaughn.....	D	104	6	Mgs	620	.....	.....	Tj	P	2	131	251	7.6	..	Cased to 104 ft. Driller estimated capacity of 30 gpm. Supplies trailer park and Dari-King.
O-23	J. H. Templeton	D	95	6	IPpv	1,040	.....	.....	Tj	D	6	16	65	...	62	
O-24	Ethel Patterson.....	D	48.2	6	IPpv	1,020	16.5	10-20-61	Tj	D	24	32	223	...	..	

O-25	Bardo Buchanan	D	75.0	6	IPpv	1,010	26.9	10-12-61	Tj	N	5	16	59	6.5	64	Water contains excessive iron.
O-26	Sorter Estate	S			Mb	640			Tj	D	4	51	120	7.8	59	Ward Spring. Supplies 2 families. See table 1.
O-27	Earline Rogers	D	68	6	Mfp	650			Tj	D	7	29	103	6.8		Cased to 68 ft.
O-28	Ellis King	D	128	6	Oc	640	20	1-31-62	Tj	D	7	108	220	7.7		Cased to 20 ft.
O-29	Crain Oil Co.	D	100	6	Mt-Mfp	640	35	11- 1-61	Tj	P,D	3	103	214	7.3		Supplies 1 family and service station.
O-30	Elmer Buchannon	D	70	6	IPpv	1,010	15	9-29-61	Tj	D	2	11	45	6.3		
O-31	Crain Oil Co.	D	70	6	IPpv	1,020	20	10-12-61	Tj	P	9	37	137	6.3		Supplies service station.
P-1	Martling School	D	30	6	IPpv	990	7	10-16-61	Tj	P						Supplies 26 students.
P-2	Burton Burgess	D	51.5	6	IPpv	1,040			Tj	D,S	6	30	104			Cased to 13 ft. Supplies 1 family and 13,000 chickens. Water contains excessive iron.
P-3	Osten Terrell	D	124.0	6	IPpv	1,040	33.4	10-17-61	M	D	4	62	153		63	Cased to 6 ft. Water contains excessive iron.
P-4	Alabama State Park	D	103	6	Mb	600			Tj	P	1	202	356			Supplies cafe and 22 cabins.
P-5	Mr. Sharman	D	367	6	Mp Mb	1,080	100	10-17-61	Ph	D,S	1	138	284		64	Supplies 2 families and chicken house.
P-6	Orville Vandegrift	D	65	6	IPpv	1,050			Tj	D	2	6	44			Water contains excessive iron.
P-7	A. C. Simmons	D	52.2	6	IPpv	1,060	26.8	10-17-61	M	D	34	54	265		63	
P-8	H. C. Strickland	D	50	6	IPpv	1,060	25	10-17-61	Tj	D	6	5	37	6.4		
P-9	Alder Springs School	D		6	IPpv	1,080			Tj	P	3	22	77	6.3		Supplies 38 students.
P-10	Joseph Mark	Du	29.5	48	IPpv	1,050	26.6	10-23-61	M	D	16	33	155	6.2		Not cased.
P-11	J. B. Malone	D	137	6	IPpv	1,060	60	10-19-61	Tj	D	18	58	228		63	Cased to 6 ft. Supplies 3 families.
P-12	John Morton	D	111	6	IPpv	990			Tj	D,S	6	24	100			Water contains excessive iron.
P-13	Mervin Todd	D	90	6	IPpv	980			Tj	D,S	2	24	68			Cased to 12 ft. Supplies 1 family and 2 chicken houses.
P-14	Amos Lowery	D	84.5	6	IPpv	960	25	10-16-61	Tj	D	24	38	181	5.7		Cased to 12 ft. Supplies 2 families.
P-15	L. G. Belue	D	23	6	IPpv	840	5	10-16-61	Tj	D						Water contains excessive iron; water conditioner installed.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
P-16	B. H. Rains	D	94	6	IPpv	990	30	10-16-61	Tj	D	4	30	80	6.8		Cased to 5 ft. Water at 50 and 92 ft. Water contains excessive iron.
P-17	Glen Green	D	144	6	IPpv	960	32	10-16-61	Tj	D	8	15	70	6.5		Cased to 8 ft.
P-18	Joe M. Swords	D	42	6	IPpv	960			Tj	D	18	22	130	7.0		Cased to 9 ft. Pumps dry in 3 min with ½ hp jet pump. Water contains excessive iron; water conditioner installed.
P-19	J. O. Ennis	D	30.8	6	IPpv	960	19.9	10-23-61	M	D						Supplies drinking water only.
P-20	Brashier Chapel School	D	39.1	6	IPpv	1,020	29.1	10-12-61	N	N						
P-21	O. W. Latham	D	44.6	6	IPpv	1,020	31.0	10-20-61	M	D	18	20	124			
P-22	Brantley Moore	D	170	6	IPpv	1,040	35	10-23-61	Tj	P,D	2	7	26	5.9	62	Cased to 12 ft. Supplies house, store, and service station.
P-23	W. C. Rooks	Du	23.1	48	IPpv	985	15.3	10-23-61	Tj	D	6	12	79	6.2	62	Not cased.
P-24	Albert Patterson, Jr	D	110	6	IPpv	960			Ts	D	3	22	66	6.4		Supplies 2 families. Water contains excessive iron; water conditioner installed.
P-25	Albertville Country Club	D		6	IPpv	980			Tj	P,D	6	58	155	7.1	63	Supplies club house and 1 residence.
P-26	Jeff Wilkerson	D	87	6	IPpv	960			Tj	D,S	7	17	72			
P-27	H. A. Davis	D	103	6	IPpv	980	100	10-19-61	Tj	D	2	93	217		63	Inadequate supply for 1 family and store.

Q-1	L. G. Baker	D	74.5	6	IPpv	1,070	41.6	10-17-61	Tj	D,S	...	...	...	...	..	Cased to 20 ft. Water contains excessive iron.
Q-2	Carl Wilkinson	D	161.2	6	IPpv	1,110	37.2	10-23-61	M	D	10	32	134	7.0	62	
Q-3	Asbury School	D	206.5	6	IPpv	1,100	86.0	10-17-61	Tj	P	3	49	123	...	..	Cased to 40 ft. Supplies 316 students.
Q-4	Huston Thrash	D	64.2	6	IPpv	1,100	42.3	10-17-61	Tj	D,S	20	28	181	...	64	
Q-5	Neddy Isbell	D	157.7	6	IPpv	1,030	71.9	10-17-61	M	D	14	15	96	...	62	
Q-6	Nell Landers	D	100	6	IPpv	1,080	.....	.....	Tj	D,S	15	78	221	...	..	Supplies 1 family and 2 chicken houses.
Q-7	Walter Williams	D	70.7	6	IPpv	1,040	65.5	10-17-61	M	D	...	...	...	...	..	Inadequate supply for 1 family. Water muddy.
Q-8	C. M. Davis	D	105	6	IPpv	1,040	35	10-19-61	Tj	D,S	5	28	92	...	63	Cased to 8 ft.
Q-9	W. E. Cryar	D	128	6	IPpv	1,060	33.2	10-17-61	Tj	D	4	10	76	...	..	Cased to 20 ft.
Q-10	J. H. England	D	70	6	IPpv	960	.....	.....	Tj	D,S	19	39	183	...	..	
Q-11	Harmon Gary	D	55.3	6	IPpv	1,020	50.5	10-17-61	Tj	D,S	1	25	78	...	..	Supplies 1 family and 14,000 chickens. Water contains excessive iron; water conditioner installed.
Q-12	I. E. Powell	D	80	6	IPpv	1,060	.....	.....	Tj	D, Ind	7	26	95	...	..	Supplements well Q-13.
Q-13	.....do.....	D	200	6	IPpv	1,055	.....	.....	Tj	D, Ind	...	...	...	...	..	Supplies 3 families, 3 stores, service station, grainery, and gin. Water contains excessive iron; water conditioner installed.
Q-14	Clift Brown	D	93	6	IPpv	960	.....	.....	Tj	D	2	55	137	...	..	
R-1	Willis Langston	Du	28.2	48	IPpv	1,080	19.7	9-13-61	M	D	21	51	268	7.0	63	Not cased. Supply low during dry season.
R-2	J. I. McConnell	D	104	6	IPpv	1,070	35	10-17-61	Tj	D,S	5	63	161	...	..	Cased to 4 ft. Reported acid water.
R-3	New Macedonia Church	D	100	6	IPpv	1,060	25	9-13-61	Tj	D	4	23	74	7.2	65	Supplies church and parsonage.
R-4	Roy Smith	D	71.1	6	IPpv	1,050	58.8	9-13-61	M	D	12	35	134	7.1	64	Reported mineral water; muddy after 3 or 4 buckets drawn.
R-5	Gladys Kuykendall	D	96	6	IPpv	1,060	40	9-13-61	Tj	D	4	18	73	6.8	..	Cased to 12 ft.
R-6	G. J. Dickey	D	85	6	IPpv	1,065	40	9-13-61	Tj	D,S	7	62	160	7.1	65	Water contains excessive iron.

Table 4.–*Records of wells and springs in Marshall County*–Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
R-7	City of Albertville ...	D	246.0	10	IPpv	940	31.0 30.7	6-30-49 7-21-61	N	N	1	78	...	...	..	10-in casing to 17 ft. Drilled to 600 ft, 8-in casing to 245 ft; natural gas at 515 ft. 8-in casing pulled and well plugged at 246 ft. Water at 75, 90, and 160 ft. Drawdown 18 ft after 24 hrs pumping 420 gpm 8-17-49. Supplied Albertville from 1949 to 1956. See table 5.
R-8	.... do.....	D	245.5	8	IPpv	940	28.0	8-16-49	N	N	...	...	...	...	..	10-in casing to 23 ft. Drawdown 26 ft after 24 hrs pumping 415 gpm, 8-15-49. Standby well from 1949 to 1956.
R-9	John Davis.....	D	132.5	6	IPpv	1,000	58.5	9-13-61	Tj	D,S	3	53	182	7.0	..	
R-10	Mrs. Otis Davis.....	D	44.9	6	IPpv	1,000	21.6	9-13-61	M	D,S	5	12	65	5.6	64	Water contains excessive iron.
R-11	M. G. Sumners	D	330	6	IPpv	1,105	60	9-13-61	Tj	D,S	1	104	237	7.3	..	Cased to 55 ft. Water from 90 to 100 ft and at 150 ft. Supply inadequate for 1 family and 15,000 turkeys.
R-12	Will Gore	D	29.0	6	IPpv	1,000	20.6	9-14-61	M	D	13	32	146	6.2	64	
R-13	Beulah School	D	69.0	6	IPpv	1,060	17.5	9-14-61	Tj	P	2	87	206	7.1	..	

R-14	H. N. Stephens	D	62	6	IPpv	1,110	32	9-14-61	Tj	D	1	14	40	6.9	. .	Supplies 2 families except for washing white clothes. Water contains excessive iron.
R-15	Oneal Arnold	D	32.5	6	IPpv	1,100	20.3	9-14-61	Tj	D	5	6	46	6.2	. .	Water contains excessive iron.
R-16	Dennis Green	D	75	6	IPpv	1,040	30	9-14-61	Tj	D	6	46	124	7.1	65	Supplies 2 families. Water contains excessive iron.
R-17	Van E. Harper	D	56.0	6	IPpv	970	31.7	9-14-61	Tj	P	2	90	213	7.6	. .	Supplies service station and barber shop. Water contains excessive iron.
R-18	W. C. Hefner	D	73	6	IPpv	1,050	.....	.....	Tj	D	10	35	124	7.0	. .	
R-19	F. M. Jones	D	38.2	6	IPpv	1,020	7.9	9-14-61	M	D	1	45	121	7.4	. .	Water contains excessive iron.
R-20	Frank Diamond	Du	26.5	48	IPpv	1,070	17.2	9-14-61	M	D	60	37	324	5.3	62	Not cased.
R-21	Vernon W. Lackey	Du	29.2	24	IPpv	1,080	15.2	8-14-61	M	D	81	28	312	7.3	64	Do.
R-22	C. B. Martin	Du	28.0	48	IPpv	1,080	16.7	9-11-61	Tj	D	13	36	181	6.9	64	Do.
R-23	WAVC Radio	D	.....	6	IPpv	1,080	.....	.....	Tj	D	4	54	141	7.2	64	Water contains excessive iron.
R-24	Mrs. Ira Bright	D	55	6	IPpv	1,080	35	9-11-61	Tj	D	12	24	130	6.7	. .	Do.
R-25	J. D. Duncan	D	56.2	6	IPpv	1,020	40.2	9-14-61	M	D,S	15	29	138	6.6	62	
S-1	Mat Webb	D	53.5	6	IPpv	1,020	46.0	9-14-61	M	D,S	5	20	93	5.5	. .	Supply low during dry seasons.
S-2	Joe Davis	D	155	6	IPpv	990	80	10-17-61	Ts	D,S	7	22	97	...	. .	Cased to 10 ft. Supplies animal clinic.
S-3	Corbinville Methodist Church.	D	50	6	IPpv	1,020	20	9-14-61	Tj	D	5	16	71	5.7	. .	Water contains excessive iron.
S-4	Webb Armstrong	D	60.1	6	IPpv	1,030	36.8	9-22-61	N	N	...	...	...	...	. .	
S-5	Rex Joiner	D	34.2	6	IPpv	1,040	15.5	9-22-61	N	N	...	...	...	...	. .	Do.
S-6	John Davis	D	27.0	6	IPpv	1,030	17.5	9-22-61	M	D	...	...	...	...	. .	
S-7	Albert Jordan	D	28	6	IPpv	1,000	15	9-15-61	Tj	D	17	57	183	7.2	. .	Do.
S-8	John Hard	Du	23.9	48	IPpv	1,010	18.3	9-22-61	M	D	12	10	64	6.6	62	Not cased. Supply low during dry season.
S-9	S. J. Norton	Du	27.3	48	IPpv	1,030	19.4	9-15-61	M	D	36	55	271	6.4	63	Cased to 5 ft.
*S-10	American Rubber Co.	D	405	8	IPpv	1,055	131.6	10-19-56	T	Ind	...	...	...	...	63	Cased to 20 ft. See table 5.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
S-11	American Rubber Co. .	D	470	6	IPpv	1,060	.....	.....	T	Ind	...	...	...	...	..	
S-12	.... do.....	D	334	6	IPpv	1,060	.....	.....	T	Ind	7	73	241	7.9	..	
S-13	City of Albertville ...	D	.....	..	IPpv	1,040	.....	.....	T	N	...	...	...	...	..	
S-14	Colonial Poultry Co ..	D	466	8	IPpv	1,025	50	7- 9-54	Ts	N	1	46	...	...	..	Cased to 27 ft. Well condemned by Health Dept. about 1959.
S-15	.... do.....	D	239	6	IPpv	1,030	.....	.....	T	N	1	90	...	...	..	Cased to 30 ft. Well condemned by Health Dept. about 1959.
S-16	Iva Long	D	37	6	IPpv	1,060	25	9-15-61	Tj	D	30	68	282	5.9	..	
S-17	E. A. Boyd.....	Du	32.0	36	IPpv	1,100	17.7	9-15-61	M	D	76	59	426	6.4	62	Tile casing to 32 ft. Supply low during dry years.
S-18	North Alabama Poultry Coop., Inc.	D	250	6	IPpv	1,065	.....	.....	T	N	2	88	...	...	..	Cased to 30 ft.
S-19	.... do.....	D	410	8	IPpv	1,070	.....	.....	Ts	Ind	1	58	...	...	..	Supplies about 72,000 gpd.
S-20	Yancey and Yancey Septic Tank Co.	D	75	6	IPpv	1,040	.....	.....	Tj	Ind, D	1	38	96	7.0	..	Cased to 20 ft. Water from 65 to 70 ft. Reported iron, 10 ppm. See table 6.
S-21	.... do.....	D	229	6	IPpv	1,040	10	9-18-61	Tj	Ind, D	...	...	...	...	..	Cased to 149 ft. Reported iron, 3 ppm. See table 6.
S-22	Fred Williams	Du	25	48	IPpv	1,040	10	9-18-61	Tj	D	27	18	162	6.8	..	Not cased. Supply low during dry years.

S-23	Mrs. S. J. Herd	Du	24.3	48	IPpv	1,050	11.4	9-18-61	Tj	D	4	13	52	6.8	64	Not cased.
S-24	G. B. Cofield	Du	22.0	48	IPpv	1,040	11.1	9-15-61	Tj	D	3	6	31	6.3	64	Do.
S-25	E. J. Barnes	D	40.3	6	IPpv	970	17.9	9-18-61	M	D	28	40	230	6.8	65	
S-26	James T. Hart	D	144	6	IPpv	980	25	9-18-61	Tj	D,S	8	70	177	7.5	. .	
S-27	D. E. Latham	D	96	6	IPpv	1,010	. . . . .	. . . . .	Tj	D	3	38	97	6.4	. .	Supplies 1 family and service station. Water contains excessive iron.
S-28	J. M. Pate	Du	31.7	48	IPpv	1,060	17.1	9-15-61	Tj	D	27	43	313	4.2	. .	Inadequate supply for 1 family.
S-29	J. A. Whitmire	D	67	6	IPpv	1,080	. . . . .	. . . . .	Tj	D	1	22	68	6.4	63	Supplies 2 families. Water contains excessive iron; water conditioner installed.
S-30	G. E. Butler	D	59.6	6	IPpv	1,040	28.8	8-14-61	M	D	2	41	110	7.3	. .	Water contains excessive iron.
S-31	James Boyd	D	81	6	IPpv	1,020	20	9-18-61	Tj	D	3	53	153	7.4	. .	
S-32	Bob Humpheries	D	101	6	IPpv	1,030	25	8-14-61	Tj	D	3	69	170	7.5	. .	Cased to 20 ft. Water contains excessive iron.
S-33	Harry Brock	Du	27.4	36	IPpv	1,020	17.6	9-18-61	Pv	D,S	49	30	273	6.4	. .	Cased to 2 ft. Supply low during dry years.
S-34	E. C. Amos	D	60	6	IPpv	1,020	40	9-15-61	Tj	D,S	4	52	141	6.9	. .	
S-35	Autry Glassco	D	118	6	IPpv	1,020	45	9-18-61	Tj	D	3	58	163	7.5	64	
S-36	Marvin Brock	D	100	6	IPpv	1,040	. . . . .	. . . . .	Tj	D	3	32	108	7.2	65	Water contains excessive iron.
S-37	Andy Glassco	D	112	6	IPpv	1,000	37	9-18-61	Tj	D,S	2	39	144	7.5	68	Cased to 30 ft. Supplies 1 family and 2 chicken houses.
S-38	Harry Brock	D	228	6	IPpv	870	20	9-18-61	Tj	D	31	6	63	8.4	64	
S-39	T. E. Parish	D	60.7	6	IPpv	980	26.2	9-18-61	Tj	D	9	48	131	7.0	65	
S-40	O. E. Glover	D	113	6	IPpv	890	30	9-18-61	Tj	D,S	6	60	164	7.3	. .	Cased to 6 ft. Water from 110 to 113 ft. Water contains excessive iron; water conditioner installed.
S-41	A. E. Miller	D	67	6	IPpv	980	10	9-15-61	Tj	D,S	6	23	80	6.5	63	Supplies 2 families and 2 chicken houses.
S-42	J. L. Lay	Du	21	48	IPpv	980	15	9-15-61	Tj	D	14	30	125	6.5	. .	Not cased. Reported water level varies from 11 to 19 ft below land surface.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
S-43	Edgar Davis	D	79	6	IPpv	990	50.7	8-14-61	Tj	S	4	89	212	7.6	..	
S-44	Russell Trammell	D	68	6	IPpv	990	15	9-18-61	Ts	D,S	4	18	57	6.7	..	
S-45	Dr. Pepper Bottling Co.	D	165	8	IPpv	1,010	30	8-11-61	T	Ind	3	71	182	7.4	..	Water contains excessive iron; water conditioner installed.
S-46	City of Boaz	D	194.9	8	IPpv	1,040	74.6	8-30-61	N	O	...	...	...	...	63	Observation well August 1961 to August 1962. Water contains excessive iron. Drawdown 90 ft after 4 hrs pumping 70 gpm, 8-10-61.
*S-47	....do	D	.....	..	IPpv	1,040	.....	.....	T	P	6	102	261	6.7	..	Water contains excessive iron.
S-48	....do	D	.....	..	IPpv	1,040	.....	.....	T	P	...	...	...	...	..	Wells S-47 and S-48 supply city, supplemented by Albertville system. Water conditioner used.
T-1	Sand Mountain Nursing Home.	D	83	6	IPpv	1,040	35	10-12-61	Tj	P	5	13	68	6.7	..	Cased to 50 ft. Supplies 2 residences and 27-bath nursing home. Water is chlorinated.
T-2	Jimbo Sims	D	102	6	IPpv	1,020	37	9-29-61	Pv	D,S	4	24	63	6.7	..	Cased to 12 ft. Supplies 2 families.

T-3	R. W. Martin	D	96	6	IPpv	990	25	9-29-61	Tj	D	1	44	116	6.7	..	Cased to 18 ft. Water at 94 ft. Driller estimated capacity of 60 gpm in 1959. Water contains excessive iron; water conditioner installed.
T-4	E. W. Cowen	Du	22.6	24	Mt	620	14.5	11- 1-61	Tj	D,S	...	...	...	...	..	Not cased.
T-5	....do	S	.....	..	Mgs	610	.....	.....	N	N	2	100	197	6.9	63	Clear spring. See table 1.
T-6	Pleasant Grove School.	D	75	6	IPpv	990	.....	.....	Tj	P	3	52	132	7.2	64	Supplies 168 students. Water contains excessive iron; water conditioner installed.
T-7	A. L. Teal	D	80	6	IPpv	1,010	20	9-29-61	Tj	D	4	25	89	6.9	..	
T-8	J. H. Robinson	Du	28.8	48	IPpv	1,040	21.5	9-29-61	Tj	D	41	30	224	5.4	..	Not cased.
T-9	Wayne Werren	D	179	6	IPpv	1,000	25	9-29-61	Tj	D	3	24	72	7.0	..	Cased to 27 ft. Water at 170 ft. Water contains excessive iron.
T-10	Highview School	D	100	6	IPpv	1,040	.....	.....	Tj	P	5	35	110	6.9	63	Supplies 143 students. Water contains excessive iron.
T-11	M. D. Gibson	D	85	6	IPpv	980	.....	.....	Tj	D,S	10	20	107	6.1	..	Supplies 1 family and chicken house.
T-12	A. H. Jarvis	D	48	6	IPpv	920	.....	.....	Tj	D,S	5	15	51	6.2	68	Supplies 1 family and 2 chicken houses.
T-13	C. C. Warren	D	100	6	IPpv	980	15	9-29-61	Tj	D	1	68	172	6.8	..	Water contains excessive iron.
T-14	Lee Bean	D	50	6	IPpv	940	30	10-10-61	Tj	D, Ind	16	65	302	7.1	..	Supplies 2 families and cotton gin. Water contains excessive iron.
T-15	Liberty Hill School	D	40	6	IPpv	920	.....	.....	Tj	P	4	8	36	6.4	64	Supplies 38 students.
T-16	W. N. Horton	Du	33.7	48	IPpv	990	21.3	10- 9-61	Tj	D	20	17	161	6.9	65	Not cased.
T-17	C. C. Ford	Du	25	48	IPpv	1,000	16	10- 9-61	Tj	D	37	45	305	6.5	..	Do.
T-18	W. L. Hammond	D	62	6	IPpv	1,020	40.0	10- 9-61	Tj	D,S	23	55	225	6.7	64	Supplies 1 family and 2 chicken houses. Supplemented by a second well.
T-19	Robert Champion	D	50	6	IPpv	980	25	10-12-61	Tj	D,S	4	38	100	7.0	65	Cased to 20 ft. Supplies 3 families. Water contains excessive iron.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance micromhos at 25° C)	pH		
T-20	Perry Pridmore	D	130	6	IPpv	1,000	57.9	10-12-61	Tj	D,S	3	12	64	6.8	..	Cased to 15 ft. Supplies 1 family and 3 chicken houses. Water contains excessive iron.
T-21	Lonnie Martin	D	45	6	IPpv	920	26	10- 9-61	Tj	D	6	18	74	6.5	..	Water contains excessive iron.
T-22	Roy Harris	D	120	6	IPpv	860	85	10-10-61	Tj	D	...	...	...	...	..	
T-23	Tim Buckelew	D	85	6	IPpv	940	40	9-28-61	Tj	D,S	3	15	59	6.7	..	Cased to 12 ft. Supplies 1 family and 2 chicken houses. Water contains excessive iron.
T-24	M. M. Maybry	D	90	6	IPpv	980	33	9-28-61	Tj	D,S	7	14	55	6.7	..	Water contains excessive iron and has hydrogen sulfide odor.
U-1	Adella Bodine	D	133	6	Oc	640	.....	.....	F, Tj	D	4	286	501	7.2	..	Cased to 13 ft. Water has hydrogen sulfide odor.
U-2	L. C. Camp	S	.....	..	Mb	660	.....	.....	Tj	D	1	61	115	7.6	62	Unnamed spring. See table 1.
U-3	D. T. Faust	S	.....	..	Mb	710	.....	.....	N	N	...	...	...	...	61	Feemster Spring. See table 1. (No. 45, Johnston, 1933.)
U-4	A. C. Whitaker	S	.....	..	Oc	615	.....	.....	Tj	D	...	...	...	...	61	Unnamed spring. See table 1.
U-5	Edward Cowen	D	70	6	Mt	680	40	11- 1-61	Tj	D	4	122	248	7.0	..	
U-6	E. W. Cowen	Du	45.6	24	Mgs	660	30.8	11- 1-61	Tj	D	6	71	167	7.1	..	Supplies 3 families.

U-7	A. C. Whitaker	D	105	6	Oc	640	80	1- 4-62	Tj	D	24	238	451	7.6	..	
U-8	D. T. Faust	D	73	6	Oc	660	2.3	1-31-62	Tj	D	7	112	253	7.6	..	Cased to 53 ft.
U-9	M. G. McCollum	Du	30.6	36	Mgs	640	22.8	11- 1-61	M	D	16	134	347	7.0	62	Cased to 30 ft.
U-10	Hambrick Estate	D	46.2	6	IPpv	950	22.7	10-10-61	M	D	112	55	578	5.4	..	Supply low during dry season.
*U-11	Howard McDerment	S	.....	..	Mb	650	.....	.....	T	Ind	4	124	247	7.5	61	Big Spring. Supplies minnow farm with 960 gpm. See table 1.
U-12	Nixon Chapel School	D	100	6	IPpv	926	.....	.....	Tj	P	5	10	41	6.8	64	Supplies 105 students. Water contains excessive iron.
V-1	D. L. Moman	D	102	6	IPpv	850	.....	.....	F, Tj	D	2	54	140	7.4	63	Estimated flow, less than 1 gpm on 10-10-61. Water contains excessive iron.
W-1	A. L. Maddox	D	103	6	IPpv	980	.....	.....	Tj	P	2	20	58	7.2	..	Supplies service station. Water contains excessive iron.
W-2	Clara Carnes	D	116	6	IPpv	960	40	9-22-61	Tj	D,S	1	110	241	7.6	64	Supplies 2 families and 2 chicken houses.
W-3	E. A. Blackwood	D	80	6	IPpv	960	.....	.....	Tj	D,S	4	99	233	7.4	..	Supplies 1 family and dairy barn. Water contains excessive iron; water conditioner installed.
W-4	O. L. Murry	D	41.2	6	IPpv	905	15.1	9-28-61	M	D	2	4	16	7.3	60	
W-5	A. E. Baker	D	48	6	IPpv	905	38	9-28-61	Tj	D	68	76	419	7.1	61	Cased to 4 ft.
W-6	John E. Hunt	D	37	6	IPpv	800	30	9-28-61	Tj	D	1	38	95	7.4	..	Water contains excessive iron.
W-7	Raymond Stephen	D	40	6	IPpv	865	35	9-28-61	Tj	D	11	14	53	7.4	..	Cased to 6 ft. Supplies 2 families.
W-8	James Spears	D	175	6	IPpv	940	60	9-28-61	Tj	D	3	104	228	7.6	..	Cased to 57 ft. Water at 165 ft. Drawdown 10 ft after bailing 40 gpm.
W-9	W. F. Bowman	D	28	6	IPpv	900	8	9-22-61	Tj	D,S	2	58	147	7.5	..	Supplies 1 family and 2 chicken houses.

Table 4.–*Records of wells and springs in Marshall County*–Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 25° C)	pH		
W-10	Douglas High School	D	147	6	IPpv	940	40	9-22-61	Tj	P	...	...	...	...	..	Cased to 45 ft. Supplies lunch room and agricultural building. Water contains excessive iron. See table 6.
W-11	Douglas Grammar School.	D	127	6	IPpv	940	27	9-22-61	Pv	P	3	35	109	7.3	..	Cased to 45 ft. Supplies 700 students. Water contains excessive iron.
W-12	Jack Morton	D	175	6	IPpv	950	60	9-28-61	Tj	P	2	70	178	7.6	..	Cased to 74 ft. Water at 165 ft. Drawdown 32 ft after bailing 40 gpm. Supplies cafe.
W-13	Thomas Minton	D	77.7	6	IPpv	920	12.4	9-25-61	M	D	12	18	96	7.0	63	Cased to 12 ft.
W-14	W. L. McCreless	D	82	6	IPpv	910	.....	.....	Tj	D,S	6	71	170	7.5	..	Cased to 8 ft. Supplies 1 family and 2 chicken houses.
W-15	Brown's Hardwere and Drilling Co.	D	70	6	IPpv	940	.....	.....	Ts	D	...	...	...	...	..	Cased to 35 ft. Water at 50 ft. Water contains excessive iron; water conditioner installed.
W-16	Warren Cook	D	217	6	IPpv	940	40	9-28-61	Ts	D	2	90	228	7.5	63	Cased to 52 ft. Water at 100, 165, and 210 ft. Reportedly water contains excessive iron at 100 and 165 ft, but no iron at 210 ft.

W-17	James Jackson	D	55	6	IPpv	920	35	9-28-61	Tj	D,S	3	19	69	7.5	64	Cased to 15 ft. Supplies 1 family and 2 chicken houses. Water contains excessive iron.
W-18	Brice Burgett.....	D	30.5	6	IPpv	845	16.2	9-28-61	Tj	D,S	2	71	175	7.1	64	Supplies 1 family and 1 chicken house.
W-19	Roy Jimmeson	D	82	6	IPpv	910	.....	.....	Tj	D	3	18	72	7.4	..	Cased to 40 ft. Water contains excessive iron; water conditioner installed.
W-20	Albert G. Dyar.....	D	70	6	IPpv	880	.....	.....	Tj	D	27	63	248	6.6	..	Inadequate supply for 1 family.
W-21	Victor Wiggly.....	D	99	6	IPpv	850	30	9-22-61	Tj	D	7	64	214	7.5	..	Cased to 31 ft. Drawdown 10 ft after bailing 35 gpm. See table 6.
W-22	Sheffer Dyar.....	D	78	6	IPpv	920	20	9-26-61	Tj	D	2	22	61	7.4	..	Cased to 21 ft. Water at 77 ft.
W-23	O. H. Turner	D	45	6	IPpv	900	25	9-25-61	Tj	D	5	28	89	6.7	..	
W-24	Bobby Turner.....	D	125	6	IPpv	940	75	9-26-61	Tj	D,S	12	41	122	7.2	..	Cased to 32 ft. Water contains excessive iron. See table 6.
W-25	Mt. Hebron Grammar School.	D	85	6	IPpv	890	47	9-25-61	Tj	P	3	12	51	7.0	..	Cased to 30 ft. Supplies 84 students
W-26	Young's Gin and Grain Co.	D	100	6	IPpv	880	50	9-25-61	Tj	D, Ind	5	70	172	7.3	..	Cased to 18 ft. Supplies gin, grocery store, barber shop, and residence.
W-27	D. R. Nelson	D	127	6	IPpv	890	50	9-25-61	Tj	D	10	30	117	6.7	..	Cased to 8 ft.
W-28	Smith Dyar	D	150	6	IPpv	890	58.8	11-15-61	Tj	D	...	...	...	...	..	Cased to 30 ft. Water at 140 ft. See table 6.
W-29	Roy Smith.....	D	137	6	IPpv	890	50	9-26-61	Tj	D,S	10	32	107	7.5	..	Cased to 54 ft. Water at 120 ft. Water contains excessive iron; water conditioner installed.
W-30	J. D. Dyar	D	98	6	IPpv	940	40	10- 9-61	Tj	D,S	5	26	82	7.0	..	Cased to 30 ft. Water contains excessive iron.
X-1	Gold Kist Poultry Growers.	D	350	8	IPpv	1,010	60	5- -62	T	Ind	...	...	...	...	62	Supplies 300 gpm for 16 or 18 hrs per day. Water contains excessive iron.

Table 4.—*Records of wells and springs in Marshall County*—Continued

Well or spring	Owner	Type	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Chemical analysis				Temperature (°F)	Remarks
							Above (+) or below land surface (feet)	Date of measurement			Chloride (Cl) (ppm)	Hardness as $CaCO_3$	Specific conductance (micromhos at 250 C)	pH		
*X-2	Gold Kist Poultry Growers.	D	450	8	IPpv	1,020	.....	.....	T	Ind	5	83	277	6.9	62	Cased to 40 ft. Supplies 300 gpm for 16 or 18 hrs per day. Water contains excessive iron.
X-3	J. W. Taylor.....	Du	21.1	48	IPpv	1,040	12.5	8-14-61	N	N	...	...	...	...	..	Not cased.
X-4	Clyde S. Lackey	Du	21.6	24	IPpv	1,060	11.7	8-14-61	N	N	49	20	274	6.2	..	
X-5	Luther Hale	D	52.4	6	IPpv	970	25.5	8-14-61	Tj	D	4	35	106	7.1	..	Water contains excessive iron.
X-6	Walter Williams	D	87.5	6	IPpv	1,050	16.4	9-11-61	Tj	D	...	...	...	...	..	Do.
X-7	Bruce Wilkinson	D	100	6	IPpv	1,050	.....	.....	Ts	D,S	...	...	...	...	..	Supplies 1 family and 4 chicken houses.
X-8	-- Sneed	D	27.7	6	IPpv	1,000	15.3	9-11-61	N	N	...	...	...	...	..	
X-9	Doyle Singleton.....	D	72	6	IPpv	960	.....	.....	Tj	D	1	69	170	7.4	..	Supplies 2 families.
X-10	Carl Garrett	Du	19.7	48	IPpv	980	7.0	9-11-61	Tj	D	18	16	122	6.4	..	
X-11	C. W. Teal	D	92.5	6	IPpv	960	32	9-11-61	Tj	D,S	3	70	170	7.5	63	Cased to 20 ft. Supplies 1 family and chicken house.
X-12	John Grimes	Du	33.2	48	IPpv	980	19.5	9-11-61	Tj	D	16	22	148	6.7	..	Not cased.
X-13	R. C. Copeland.....	Du	30.2	48	IPpv	965	15.4	9-11-61	Pv	D	51	23	267	6.5	..	Do.
X-14	Otis Miller	Du	26.0	48	IPpv	1,000	11.8	9-11-61	Tj	D,S	5	12	51	6.4	..	Not cased. Supplies 2 families.
X-15	Red Apple Church....	Du	25.9	48	IPpv	1,025	10.1	9-11-61	Tj	D	9	14	105	6.7	65	Not cased.

X-16	Clark Johnson	Du	38.1	36	IPpv	960	14.1	9-11-61	M	D	9	98	245	7.3	..	Water turbid after rain.
X-17	Bobby Russell	D	75	6	IPpv	1,000	30	9-11-61	Tj	D,S	3	58	141	7.1	..	Cased to 15 ft. Supplies 1 family and chicken house. Water contains excessive iron.
X-18	W. D. Works	D	33.2	6	IPpv	965	18.3	9-11-61	M	D	11	16	92	6.4	64	
X-19	Whitesville School	D	50	6	IPpv	950	20	9-12-61	Tj	P	5	16	61	7.0	..	Water contains excessive iron.
X-20	R. C. Kelly	D	67.2	6	IPpv	945	45.1	9-12-61	M	D	4	159	314	7.6	65	Inadequate supply for 1 family.
X-21	W. M. Owens	D	48.3	6	IPpv	930	27.2	9-12-61	M	D	11	29	136	6.3	65	Water contains excessive iron.
X-22	J. W. Braswell	Du	26.1	48	IPpv	960	13.3	9-12-61	M	D	125	72	681	6.4	65	Not cased. Water contains excessive iron.
X-23	Henry Terral	D	45	6	IPpv	940	20	9-11-61	Tj	D	10	31	135	6.8	..	Inadequate supply for 1 family.
X-24	P. R. Mason	D	185	6	IPpv	965	50	9-12-61	Tj	D	5	106	263	7.8	63	Cased to 20 ft.
Y-1	Davey F. Lester	D	61	6	IPpv	1,080	39	9-11-61	Tj	D,S	2	16	48	6.9	64	Cased to 27 ft. Water at 30 and 55 ft. Supplies 1 family and chicken house. Water contains excessive iron.
Y-2	Bethsaida Church	D	64.5	6	IPpv	1,090	31.9	9-11-61	Tj	D	...	...	...	...	..	Water contains excessive iron; water conditioner installed.
Y-3	Kenneth Hamby	D	114	6	IPpv	1,100	31.6	8-14-61	Tj	D,S	4	26	80	7.2	..	Cased to 40 ft. Water at 90 and 110 ft. Water contains excessive iron; water conditioner instelled.
Y-4	Carl Brown	Du	22.7	30	IPpv	1,080	9.1	8-14-61	M	D,S	7	20	85	7.2	64	
Y-5	Nehi Bottling Co	D	.....	8	IPpv	1,080	.....	.....	T	Ind	23	93	252	7.6	..	
Y-6	M. Williams	D	200	6	IPpv	1,050	13.5	8-14-61	Tj	S	9	38	113	8.5	..	Water contains excessive iron.
Z-1	Glenn Snead	Du	12	36	IPpv	1,100	.....	.....	F, Tj	D,S	11	12	82	7.3	..	Estimated flow, less than 1 gpm on 9-26-61.

Table 5.—*Sample logs of wells in Marshall County*

	Thickness (feet)	Depth (feet)
Well M-13		
Owner: City of Arab Driller: Campbell Brothers		
Pottsville Formation		
Sandstone, light-gray, fine-grained; brown-gray silty micaceous shale	50	50
Sandstone, light-gray, fine- to medium-grained	25	75
Sandstone, light-gray, fine- to medium-grained; shale fragments	5	80
Sandstone, light-gray, fine- to coarse-grained; medium-gray micaceous shale	5	85
Shale, dark-gray, micaceous	15	100
No sample	5	105
Shale, medium-gray, micaceous, silty and sandy; coarse-grained sandstone and large quartz pebbles	5	110
Sandstone, light-gray, medium- to coarse-grained; quartz pebbles; medium-gray shale	10	120
Sandstone, light-gray, medium- to coarse-grained; quartz pebbles; medium-gray shale; trace of calcite	10	130
Siltstone, light-brown and gray, argillaceous; dark-gray micaceous shale; trace of sandstone	5	135
Sandstone, light-gray, fine- to medium-grained; dark-gray micaceous shale; trace of siltstone	5	140
Sandstone, light-gray, fine- to medium-grained; trace of shale	10	150
Sandstone, light-gray, fine- to medium-grained; pyrite; coal fragments	5	155
Sandstone, light-gray, medium- to coarse-grained	25	180
Sandstone, light-gray, fine- to coarse-grained; quartz pebbles	5	185
Sandstone, light-gray to light-brown, fine-grained; light-gray coarse-grained sandstone with pebbles; coal fragments	5	190
Sandstone, light-gray, fine- to coarse-grained with pebbles; dark-gray micaceous shale	15	205
Sandstone, light-gray, very fine grained	5	210
Sandstone, light-gray, glassy to medium coarse-grained with pebbles	5	215
Shale, dark-gray, micaceous; gray argillaceous siltstone; coarse-grained pyritiferous sandstone	10	225
Sandstone, light-gray, fine- to medium-grained with pebbles, slightly pyritiferous	10	235

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well M-13—Continued		
Pottsville Formation—Continued		
Shale, dark-gray, micaceous, silty (sample out of place?)	5	240
Sandstone, light-gray, medium- to coarse-grained with pebbles	30	270
Sandstone, light-gray, fine- to coarse-grained with pebbles	5	275
Sandstone, light-gray, fine- to coarse-grained	5	280
Sandstone, light-gray, fine- to coarse-grained with pebbles; pyrite	10	290
Sandstone, light-gray, fine- to medium-grained	10	300
Sandstone, light-gray, fine- to coarse-grained with pebbles; coal fragments; pyrite	5	305
Sandstone, light-gray, fine- to coarse-grained with pebbles	5	310
Sandstone, light-gray, medium- to coarse-grained with pebbles	5	315
No sample	5	320
Sandstone, light-gray, medium to very coarse grained with pebbles; light-gray fossiliferous limestone	5	325
Pennington Formation		
Well O-8		
Owner: Allied Mills, Inc. Driller: Adams-Massey Co.		
No record	54	54
Hartselle Sandstone, Gasper Formation [1], and Ste. Genevieve Limestone undifferentiated		
Sandstone, pale-yellowish-orange, fine-grained, micaceous; grayish-yellow coarse-grained subangular frosted sand; moderate brownish-red very fine grained micaceous sandstone; grayish-yellow coarse-grained calcite; olive-gray sandy shale; crinoid rings; secondary deposits	10	64

[1] The nomenclature in this report follows that of the Geological Survey of Alabama but does not necessarily follow that in use by the U.S. Geological Survey.

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well O-8—Continued		
Hartselle Sandstone, Gasper Formation, and Ste. Genevieve Limestone undifferentiated—Continued		
Sandstone, pale-yellowish-orange, fine-grained, micaceous; grayish-yellow coarse to very coarse grained subangular frosted sand; moderate brownish-red very fine grained micaceous sandstone; grayish-yellow coarse to very coarse grained calcite; olive-gray sandy shale; crinoid rings; secondary deposits	10	74
Sandstone, very pale orange, fine-grained, micaceous; moderate brownish-red very fine grained micaceous sandstone; subangular frosted quartz pebbles; olive-gray sandy shale; medium-light-gray very coarse grained calcite; bluish-gray oolitic pyritiferous limestone; secondary deposits	15	89
Sandstone, yellowish-gray to grayish-orange-pink, fine-grained, micaceous; bluish-gray oolitic limestone; secondary deposit	20	109
Sandstone, yellowish-gray to grayish-orange-pink, fine-grained, micaceous; moderate orange-pink sandy micaceous shale; subangular frosted quartz pebbles; bluish-gray oolitic limestone; secondary deposit	55	164
Sandstone, very light gray, fine-grained, micaceous; grayish-orange sandy clay; limonitic concretions; subangular quartz pebbles	15	179
Clay, grayish-orange, sandy; limonitic concretions; very light gray fine-grained sandstone	15	194
Clay, grayish-orange, sandy; limonitic concretions	15	209
Shale, medium-gray, sandy, pyritiferous, micaceous	29	238
Limestone, yellowish-gray, oolitic, fossiliferous; bluish-gray crystalline limestone; olive-gray to light-gray sandy micaceous pyritiferous clay; very coarse grained subangular frosted sand; moderate reddish-brown fine-grained sandstone	10	248
Limestone, yellowish-gray, oolitic, fossiliferous; bluish-gray crystalline limestone; light-gray sandy micaceous pyritiferous shale; quartz pebbles	37	285
Shale, medium-light-gray to olive-gray, sandy, micaceous	4	289

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well O-9		
Owner: Allied Mills, Inc. Driller: Adams-Massey Co.		
No record	43	43
Hartselle Sandstone, Gasper Formation, and Ste. Genevieve Limestone undifferentiated		
Sandstone, moderate-orange-pink, coarse-grained, subangular to subrounded, frosted; secondary deposit(?)	27	70
Sandstone, very pale orange, coarse to very coarse grained, subangular to subrounded, frosted; secondary deposit(?)	10	80
Sandstone, moderate-orange-pink, very coarse grained, subangular to subrounded, frosted; secondary deposit(?)	10	90
Sandstone, moderate-orange-pink, very coarse grained, subangular to subrounded, frosted; grayish-orange fine-grained micaceous sandstone; secondary placement (possible granite?)	20	110
Sandstone, moderate-orange-pink, granular, subangular to subrounded, frosted; moderate-reddish-brown micaceous sandstone (possible granite)	10	120
Sandstone, very pale orange, granular, subangular to subrounded, frosted; very light gray very fine to fine-grained micaceous pyritiferous sandstone; moderate-reddish-brown micaceous sandstone (secondary deposit); light-gray sandy pyritiferous clay; sand pebbles	28	148
Sandstone, very light gray, fine-grained, subangular, frosted, micaceous, pyritiferous; subrounded frosted sand pebbles	25	173
Sandstone, very light gray, fine-grained, subangular, frosted, micaceous, pyritiferous; moderate-reddish-brown fine-grained micaceous pyritiferous sandstone; very pale orange sandy micaceous clay; subangular frosted sand pebbles	27	200
Shale, medium-gray, sandy, micaceous, pyritiferous, slightly calcareous	28	228
Limestone, yellowish-gray to bluish-gray, oolitic, fossiliferous; grayish-orange sandy calcareous micaceous pyritiferous fossiliferous clay	10	238

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well O-9—Continued		
Hartselle Sandstone, Gasper Formation, and Ste. Genevieve Limestone undifferentiated—Continued		
Limestone, yellowish-gray to bluish-gray, oolitic, fossiliferous; calcite crystals	10	248
Clay, yellowish-gray, calcareous, sandy, micaceous, pyritiferous, fossiliferous; yellowish-gray to bluish-gray oolitic (weathered) fossiliferous limestone	5	253
Limestone, yellowish-gray to bluish-gray, oolitic, fossiliferous; yellowish-gray calcareous sandy micaceous pyritiferous fossiliferous clay	5	258
Clay, yellowish-gray, calcareous, sandy, micaceous, pyritiferous, fossiliferous; yellowish-gray to bluish-gray oolitic (weathered) fossiliferous limestone	5	263
Limestone, medium-bluish-gray, oolitic, crystalline, fossiliferous	5	268
Limestone, yellowish-gray to medium-bluish-gray, oolitic, crystalline, fossiliferous; yellowish-gray calcareous sandy micaceous fossiliferous clay	10	278
Well O-10		
Owner: Allied Mills, Inc. Driller: Adams-Massey Co.		
No record	12	12
Hartselle Sandstone, Gasper Formation, and Ste. Genevieve Limestone undifferentiated		
Clay, very pale orange, sandy	13	25
Clay, very light gray, sandy	5	30
Clay, light-gray, sandy, micaceous	10	40
Clay, medium-gray, sandy, micaceous; light-gray very fine to fine-grained micaceous sandstone	5	45
Clay, medium-gray, sandy, micaceous	5	50
Clay, medium-gray, sandy, micaceous; light-gray very fine to fine-grained micaceous sandstone	45	95
Sandstone, medium-gray, very fine to fine-grained, micaceous; medium-gray sandy clay	70	165
Sandstone, very light gray, fine- to medium-grained, micaceous, pyritiferous; medium-gray very fine to fine-grained micaceous sandstone	15	180

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well O-10—Continued		
Hartselle Sandstone, Gasper Formation, and Ste. Genevieve Limestone undifferentiated—Continued		
Sandstone, very light gray, fine- to medium-grained, micaceous, pyritiferous	10	190
Sandstone, light-gray, very fine to fine-grained, micaceous, pyritiferous; very light gray fine- to medium-grained subangular to subrounded frosted sand; very light gray fine- to medium-grained micaceous pyritiferous sandstone; light-gray sandy micaceous clay	10	200
Sandstone, very light gray, fine- to medium-grained	3	203
Sandstone, very pale orange, medium-grained, subangular, uncemented	5	208
Sandstone, very pale orange, medium- to coarse-grained, subangular, uncemented	10	218
Sandstone, very light gray, medium-grained; subangular frosted quartz pebbles	7	225
Sandstone, very light gray, fine-grained; subangular frosted quartz pebbles; light-gray sandy micaceous shale	39	264
Sandstone, very light gray, fine-grained; medium-light-gray very fine grained micaceous loosely cemented sandstone	5	269
Sandstone, very light gray, fine- to medium-grained, subangular, loosely cemented	5	274
Sandstone, very pale orange, medium- to coarse-grained, subangular, loosely cemented; subangular frosted quartz pebbles	20	294
Sandstone, very light gray, fine-grained; moderate-reddish-brown fine- to coarse-grained micaceous sandstone; subangular frosted quartz pebbles; medium-light-gray micaceous shale	15	309
Sandstone, very light gray, fine-grained; moderate-reddish-brown very fine to fine-grained iron-cemented sandstone; subangular frosted quartz pebbles	5	314
Quartz pebbles, subangular, frosted; very light gray fine-grained sandstone; moderate-reddish-brown fine-grained iron-cemented sandstone	10	324
Clay, medium-light-gray to moderate-reddish-brown, very fine to fine-grained, sandy, micaceous, pyritiferous; subangular frosted quartz pebbles	5	329

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well O-10—Continued		
Hartselle Sandstone, Gasper Formation, and Ste. Genevieve Limestone undifferentiated—Continued		
Quartz pebbles, subangular, frosted; medium-light-gray to moderate-reddish-brown very fine to fine-grained sandy micaceous pyritiferous clay; very light gray fine-grained sandstone	10	339
Same as above except all cemented together with iron oxide	5	344
Chert pebbles, yellowish-gray to very light gray, weathered; subangular frosted quartz pebbles; very light gray fine-grained sandstone	20	364
Same as above except cemented together and pyritiferous	20	384
Well R-7		
Owner: City of Albertville Driller: Adams-Massey Co.		
No record	50	50
Pottsville Formation		
Sandstone, dark-gray to green, medium- to coarse-grained, micaceous with black particles	20	70
Sandstone, dark-gray to green, medium- to coarse-grained, micaceous with black particles, pyritic	10	80
Sandstone, dark-gray to green, medium- to coarse-grained, micaceous with black particles; abundant white to yellow medium-grained quartz grains	10	90
Sandstone, dark-gray to green, medium- to coarse-grained, micaceous with black particles; dark-gray shale	10	100
Sandstone, dark-gray to green, medium- to coarse-grained, micaceous; abundant white to yellow quartz grains; limonite	10	110
Sandstone, dark-gray to green, medium- to coarse-grained, micaceous; coal fragments	10	120
Sandstone, dark-gray, medium- to coarse-grained; clay fragments	10	130
Sandstone, dark-gray, medium- to coarse-grained; shale fragments	10	140
Sandstone, dark-gray, medium- to coarse-grained; mica; coal fragments	10	150

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well R-7—Continued		
Pottsville Formation—Continued		
Sandstone, light-gray, medium- to coarse-grained; limonite; coal fragments	10	160
Sandstone, light-gray, medium- to coarse-grained; dark-gray sandstone	30	190
Sandstone, dark-gray, fine- to medium-grained; limonite; light-gray quartz grains	20	210
Sandstone, light-gray, medium- to coarse-grained; limonite; coal fragments	50	260
Sandstone, dark-gray, medium- to coarse-grained; limonite fragments; limestone fragments	10	270
Pennington Formation		
Sandstone, light-gray, fine-grained; limestone fragments	10	280
Limestone, dark-gray, sandy; mica fragments	80	360
Limestone, reddish-brown, clayey and sandy	5	365
Limestone, light-gray, sandy with some clay	15	380
Bangor Limestone		
Limestone, light- to dark-gray, sandy	60	440
Limestone, light-gray, sandy with some clay	10	450
Limestone, medium-gray, sandy with some clay	30	480
Limestone, light- to medium-gray, sandy with some clay	40	520
Limestone, medium- to dark-gray	80	600
Well S-10		
Owner: American Rubber Co. Driller: Adams-Massey Co.		
No record	85	85
Pottsville Formation		
Sandstone, light- to medium-gray, fine- to coarse-grained; medium- to dark-gray shale; mica	5	90
Sandstone, light-gray, coarse-grained	15	105
Sandstone, light-gray, coarse-grained; quartz pebble fragments	10	115
Sandstone, light-gray, fine to very coarse grained	5	120
Sandstone, medium-gray, very fine grained; shale fragments	10	130
Sandstone, very light gray, fine- to coarse-grained; dark-gray shale fragments	20	150

Table 5.—*Sample logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well S-10—Continued		
Pottsville Formation—Continued		
Sandstone, very light gray, fine- to medium-grained; dark-gray shale fragments	5	155
Sandstone, light-gray, very fine to fine-grained; dark-gray shale fragments	5	160
Sandstone, very light gray, fine- to coarse-grained	15	175
Shale, very dark gray, silty and sandy	5	180
Sandstone, very light gray, very fine to fine-grained; dark-gray shale fragments	10	190
Siltstone, medium-gray, argillaceous; dark-gray shale	5	195
Sandstone, light-gray, fine-grained; medium-gray argillaceous siltstone; dark-gray shale	5	200
Sandstone, medium-gray, very fine to fine-grained; siltstone and shale	20	220
Shale, very dark gray, micaceous, pyritiferous	10	230
Shale, dark-gray, micaceous, silty	10	240
Shale, medium-brown-gray; coal; medium-gray silty sandstone	5	245
Sandstone, light- to medium-gray, fine-grained; dark-gray shale	10	255
Sandstone, light-gray, fine-grained; shale and coal fragments	15	270
Sandstone, light-gray, fine- to medium-grained	15	285
Sandstone, light-gray, fine- to coarse-grained; small quartz pebbles	60	345
Sandstone, very light gray, mostly fine grained, few coarse grains	15	360
Sandstone, very light gray, very fine to fine-grained	30	390
Sandstone, very light gray, very fine to fine-grained; dark-gray shale and coal fragments	5	395
Sandstone, medium-gray, very fine to fine-grained, silty	5	400
Pennington Formation		
Limestone, dark-gray, sandy	5	405

Table 6.—*Drillers' logs of wells in Marshall County*

	Thickness (feet)	Depth (feet)
Well E-19		
Owner: John Hatcher Driller: Adams-Massey Co.		
Clay	17	17
Limestone	8	25
Limestone, soft	1	26
Limestone, hard	47	73
Limestone, soft	3	76
Limestone, hard	3	79
Well F-4		
Owner: Kate Duncan Smith DAR School Driller: H. W. Peerson Drilling Supply Co.		
Soil	4	4
Sandstone	99	103
Sandy shale	11	114
Limestone	31	145
Clay and shale	7	152
Limestone (hit rough place at 190 ft, lost water)	38	190
Limestone with sand	43	233
No record	267	500
Well F-28		
Owner: Gordon D. Yuck Driller: Grady Campbell		
Clay	40	40
Limestone	43	83
Limestone, soft	1	84
Limestone	2	86
Well F-29		
Owner: Gordon D. Yuck Driller: Grady Campbell		
Clay	50	50
Limestone	22	72
Limestone, soft	1	73
Limestone	34	107
Limestone, soft	1	108

Table 6.—*Drillers' logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well I-4		
Owner: Harry Rutland Driller: Grady Campbell		
Boulders and soft sandstone	60	60
Boulders and clay	23	83
Well I-14		
Owner: Bill Plemons Driller: Grady Campbell		
Clay	35	35
Limestone	115	150
Well J-4		
Owner: Leon Hornbuckle Driller: Adams-Massey Co.		
Red clay	23	23
Limestone, hard	9.5	32.5
Crack	.5	33
Limestone, hard	5	38
Crack	.5	38.5
Limestone, hard	25.5	64
Well J-11		
Owner: William Kennedy Driller: Grady Campbell		
Sandstone	80	80
Shale	69	149
Limestone	1	150
Well L-8		
Owner: Jessie Jackson Driller: Roy Bowling		
Soil and sand	30	30
Sandstone	85	115
Limestone	36	151

Table 6.—*Drillers' logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well M-8		
Owner: City of Arab Driller: H. W. Peerson Drilling Supply Co.		
Sandy clay	30	30
Sandy shale	10	40
Sandy rock, soft	10	50
Sand rock, hard	47.5	97.5
Sandy shale	41.5	139
Hard sand rock	110	249
Sandy shale	4	253
Hard sand rock	84	337
Well M-13		
Owner: City of Arab Driller: Campbell Brothers		
Soil	10	10
Soft rock	15	25
Blue shale	15	40
Hard rock	35	75
Blue shale	35	110
Hard rock	25	135
Blue shale	15	150
Hard rock	55	205
Blue shale	20	225
Hard rock	60	285
Broken formation	35	320
Limestone	....	320
Well M-15		
Owner: City of Arab Driller: Campbell Brothers		
No record	100	100
Sandstone	220	320
Shale and limestone	25	345
Limestone	40	385

Table 6.—*Drillers' logs of wells in Marshall County*—Continued

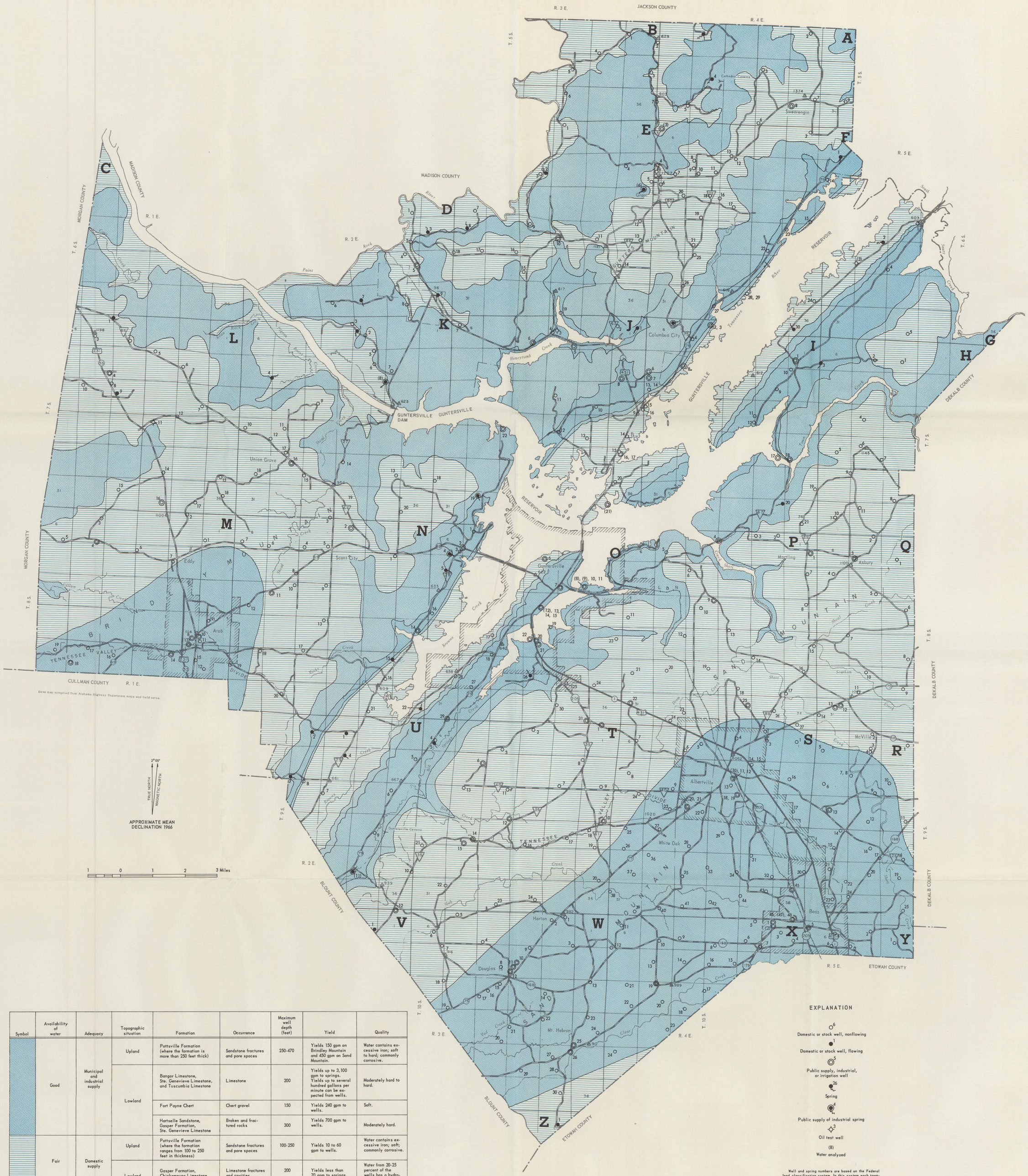
	Thickness (feet)	Depth (feet)
Well O-2		
Owner: Jack Smith Driller: Grady Campbell		
Clay	35	35
Limestone	15	50
Open cavity	39	89
Well O-3		
Owner: Rub Fuell Driller: Grady Campbell		
Sand	70	70
Rock	33	103
Well O-6		
Owner: Dr. Alvis Driller: Grady Campbell		
Soil and clay	8	8
Limestone, blue	292	300
Well O-7		
Owner: City Ice Company Driller: Grady Campbell		
Sand	39	39
Rock, hard, white	11	50
Sand, mud, and gravel	50	100
Well O-11		
Owner: Allied Mills, Inc. Driller: Adams-Massey Co.		
Sandstone and clay	192	192
Limestone	5	197
Clay	9	206
Limestone	7	213
Shale	12	225
Limestone	35	260

Table 6.—*Drillers' logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well O-12		
Owner: Boaz Spinning Mills Driller: Campbell Brothers		
Clay	30	30
Chert and clay	50	80
Hard clean chert	50	130
Well O-13		
Owner: Boaz Spinning Mills Driller: Campbell Brothers		
Clay	30	30
Chert and clay	50	80
Hard clean chert	44	124
Well O-14		
Owner: Boaz Spinning Mills Driller: Campbell Brothers		
Clay	30	30
Chert and clay (hard streak at 55 ft)	50	80
Clean chert (hard streak at 85 ft)	18	98
Well S-20		
Owner: Yancey and Yancey Septic Tank Co. Driller: W. A. Brown		
Soil and sand	20	20
Sand rock	55	75
Well S-21		
Owner: Yancey and Yancey Septic Tank Co. Driller: W. A. Brown		
Shale	36	36
Sand rock	154	190
Shale	10	200
Sand rock	29	229

Table 6.—*Drillers' logs of wells in Marshall County*—Continued

	Thickness (feet)	Depth (feet)
Well W-10		
Owner: Douglas High School Driller: Will Brown		
Soil and sand	40	40
Sandstone	80	120
Shale	27	147
Well W-21		
Owner: Victor Wiggly Driller: W. A. Brown		
Sand	4	4
Red sandstone	18	22
White sandstone	53	75
Shale (coal seam trace at 85 ft)	24.5	99.5
Well W-24		
Owner: Bobby Turner Driller: W. A. Brown		
Soil and sand	32	32
Sandstone	93	125
Well W-28		
Owner: Smith Dyar Driller: W. A. Brown		
Soil and sand	30	30
Sand rock	100	130
Coal seam	.5	130.5
Slate	4.5	135
Sand rock, gray	15	150



Symbol	Availability of water	Adequacy	Topographic situation	Formation	Occurrence	Maximum well depth (feet)	Yield	Quality
	Good	Municipal and industrial supply	Upland	Pottsville Formation (where the formation is more than 250 feet thick)	Sandstone fractures and pore spaces	250-470	Yields 150 gpm on Brindley Mountain and 450 gpm on Sand Mountain.	Water contains excessive iron; soft to hard; commonly corrosive.
			Lowland	Bangor Limestone, Ste. Genevieve Limestone, and Tuscumbia Limestone	Limestone	200	Yields up to 3,100 gpm to springs. Yields up to several hundred gallons per minute can be expected from wells.	Moderately hard to hard.
				Fort Payne Chert	Chert gravel	150	Yields 240 gpm to wells.	Soft.
				Hartselle Sandstone, Gasper Formation, Ste. Genevieve Limestone	Broken and fractured rocks	300	Yields 700 gpm to wells.	Moderately hard.
	Fair	Domestic supply	Upland	Pottsville Formation (where the formation ranges from 100 to 250 feet in thickness)	Sandstone fractures and pore spaces	100-250	Yields 10 to 60 gpm to wells.	Water contains excessive iron; soft; commonly corrosive.
			Lowland	Gasper Formation, Chickamauga Limestone	Limestone fractures and cavities	200	Yields less than 70 gpm to springs. Yields 10 to 150 gpm to wells.	Water from 20-25 percent of the wells has a hydrogen sulfide odor; moderately hard to hard.
	Poor	Intermittent or seasonal supply	Upland	Pottsville Formation (near the bluffs or where the formation is less than 100 feet thick)	Sandstone fractures and pore spaces	100	Yields less than 5 gpm to wells.	Water contains excessive iron; soft; commonly corrosive.
			Steep ridges and rugged mountain slopes	Pennington Formation, Bangor Limestone, Red Mountain Formation, Chickamauga Limestone	Limestone fractures and cavities and sandstone fractures and pore spaces	200	Yields less than 5 gpm to wells. Springs are intermittent. Seasonal yields range from a few to several hundred gallons per minute.	Moderately hard to hard.

EXPLANATION

- Domestic or stock well, nonflowing
- Domestic or stock well, flowing
- Public supply, industrial, or irrigation well
- Spring
- Public supply of industrial spring
- Oil test well
- (8) Water analyzed

Well and spring numbers are based on the Federal land classification system. In this system each township, consisting of approximately 36 square miles in area, is divided into 36 sections numbered consecutively from 1 in the northeast corner to 36 in the southeast corner. Similarly, this county is divided into townships, each assigned a letter in the same order that sections are numbered. Therefore, the letter A is assigned to the northeast township and the adjoining townships are designated alphabetically through Z in the south township. The wells within a township are numbered consecutively, as are sections in a township; for example, in township T they are designated T-1, T-2, T-3.

AVAILABILITY OF GROUND WATER IN MARSHALL COUNTY, ALABAMA

GENERALIZED GEOLOGIC MAP OF MARSHALL COUNTY, ALABAMA

by Thomas H. Sanford, Jr.

1966

System		Symbol	Formation	Thickness (feet)	Rock character	Water-bearing characteristics
Carboniferous	Pennsylvanian	IPpv	Pottsville Formation	400±	Sandstone, brown and gray, thin- to thick-bedded; gray shale; siltstone, conglomerate, and coal beds.	Water occurs in fractures and in pore spaces. Drilled wells supply from a few to as much as 450 gpm. Amount available depends on thickness and extent of the aquifers. Water is soft to hard (median hardness of water is 32 ppm), low in dissolved solids, but high in iron content.
	Mississippian	Mp	Pennington Formation	100±	Limestone, gray, argillaceous, crystalline, and dolomitic; red and green shale.	Water occurs in fractures and in limestone cavities. Locally wells supply adequate water for domestic use. Springs are numerous, many are intermittent, and flows ranged from 1 to 30 gpm in July 1962. Water is of good quality for most uses.
		Mb	Bangor Limestone	350±	Limestone, gray, crystalline, oolitic, and dolomitic; contains shale and chert nodules.	Water occurs in fractures and in limestone cavities. Wells supply adequate water for domestic use from depths of less than 100 feet. Springs are intermittent on mountain slopes and perennial in the lowlands. Measured flow of 8 springs ranged from 8 to 3,100 gpm in July 1962. Water is moderately hard to hard (61-180 ppm) and low in dissolved solids.
		Mhs: Mh	Hartselle Sandstone	0-20	Sandstone, tan and gray, fine-grained; contains shale and limestone.	Water occurs in fractures and in limestone cavities. Wells supply adequate water for domestic use. Locally, wells supply as much as 150 gpm from limestone cavities and as much as 700 gpm from highly fractured beds. The Gasper Formation in the northwestern part of the county supplies many springs. Water is of good quality for most uses. Water from 20 percent of the wells in the Gasper Formation in the northwestern part of the county has a hydrogen sulfide odor.
		Mg	Gasper Formation	150±	Limestone, gray, crystalline, and oolitic.	
		Mgs	Ste. Genevieve Limestone		Limestone, light-gray to gray, crystalline and oolitic.	
		Mt	Tuscumbia Limestone	200±	Limestone, gray, crystalline; contains chert nodules.	Water occurs in fractures, limestone cavities, and pore spaces in chert gravel. Wells supply in excess of 200 gpm along the southeast flank of the Sequatchie anticline. The narrow outcrop along the northwest flank is undeveloped but adequate domestic supplies can be obtained. The water is soft to hard and low in dissolved solids.
		Mtf	Fort Payne Chert	150±	Limestone, gray, crystalline; blue-gray dense chert.	
Devonian		Dc	Chattanooga Shale	20±	Shale, black, fissile, pyritiferous; contains sandstone.	Not an aquifer.
Silurian		Srm	Red Mountain Formation	200±	Shale, tan; tan and gray fine-grained ferruginous sandstone.	Not an important aquifer. Some springs supply adequate water for domestic use.
Ordovician		Oc	Chickamauga Limestone	?	Limestone, gray, fine-grained, argillaceous; contains chert nodules and partings of shale.	Water occurs in fractures and in limestone cavities. Wells supply from a few to as much as 30 gpm. Depths are usually less than 150 feet. Most of the springs issuing from the limestone are intermittent. Water is hard (median hardness 176 ppm) but of good quality for most uses. Some wells supply water with a hydrogen sulfide odor.
		On	Newala Limestone	?	Limestone, pearl-gray to dark-gray, thick-bedded, with little dolomite (not exposed in Marshall County, description from Jackson County).	Not an aquifer in Marshall County.

EXPLANATION

Geologic contact

△1100 Bench mark and elevation

Anticline
Showing trace of axial plane and bearing and plunge of axis

Quarry
Limestone

Quarry
Chert or sand and gravel

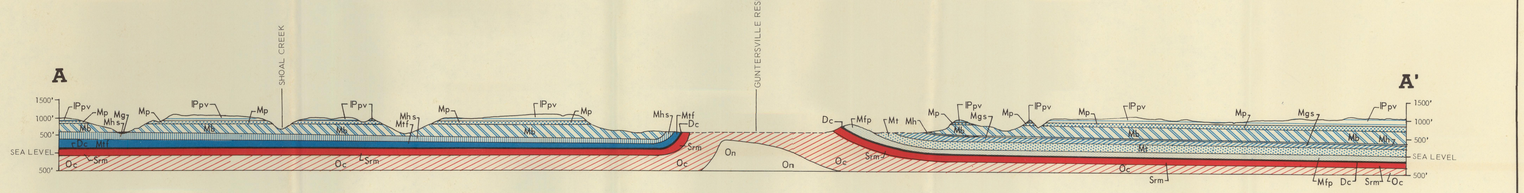
APPROXIMATE MEAN DECLINATION 1966

TRUE NORTH
MAGNETIC NORTH
2° 5'

1 0 1 2 3 Miles

Base map compiled from Alabama Highway Department maps and field notes and U.S. Geological Survey topographic quadrangles

Geology modified from Geological Survey of Alabama Map 7 (Adams, G. I., Butts, Charles, Stephenson, L. W., and Cooke, C. W., 1926, Geologic map of Alabama)



Williams & Heintz Map Corporation, Wash., D.C. 20027