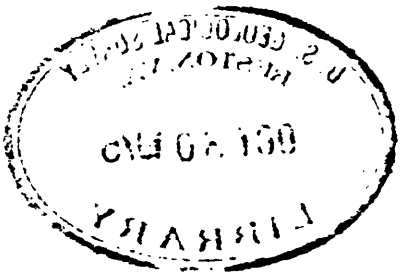
WATER AVAILABILITY OF BLOUNT COUNTY, ALABAMA

By Robert J. Faust and Joe R. Harkins, 1926—

ABSTRACT

Ground water is obtained mostly from limestone and dolomite aquifers along the Sequatchie anticline and Murphrees Valley anticline and from sandstone aquifers in Sand Mountain and Blount Mountain synclinal areas. Wells tapping some limestone and dolomite aquifers produce as much as 1.4 mgd (million gallons per day). Wells completed in sandstone of the Pottsville Formation underlying lower topographic areas may produce as much as 0.3 mgd, but those completed in sandstone underlying higher topographic areas produce lesser quantities.

Surface-water resources were appraised by use of average flow and 7-day Q_2 (median annual 7-day minimum flow). An average flow of about 640 mgd or about 1 mgd per square mile originates in the county. Streamflow during low flow conditions is small; only three streams have 7-day Q_2's that exceed 2 mgd. Estimates of storage requirements are provided for sustained draft rates of 25 to 50 percent of the average flow.



Water from aquifers and streams in Blount County is generally of suitable chemical quality for most uses. Water from the Pottsville Formation generally contains iron in excess of 0.3 mg/l (milligram per liter) and water from limestone and dolomite aquifers and from some streams during low flows is moderately hard to hard and may need treatment for certain uses.

Water use in the county was about 3.2 mgd in 1968 and 46 mgd was diverted for use outside the county.

INTRODUCTION

The U. S. Geological Survey, in cooperation with the Geological Survey of Alabama, is mapping the geology and conducting a reconnaissance of the availability of water resources of Alabama. For these studies the State was divided in to seven groups of counties that approximately coincide with major river basins; however, the work is being conducted and the reports resulting from the studies are to be published by county units. The boundaries of the seven areas and the statis of the studies are shown in figure 1.

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This report is for Blount County which is part of the upper Tombigbee-Black Warrior River basin (Ala-6-C). The purpose of this report is to present general information on water availability in such a way that a quick visual appraisal and comparison with other county areas can be made. The geologic map, prepared separately for this study, is also part of the long-range plan of the U. S. Geological Survey and the Geological Survey of Alabama to update the geologic map of the State. This report utilizes information contained in earlier reports listed in selected references. In addition, it contains water-availability maps and other water-resources information not previously published.

Figure 1. --Status of geologic and water-availability studies in Alabama.

WATER AVAILABILITY

Water availability is related to precipitation which averages about 55 inches per year in Blount County. About three-fifths of the precipitation returns to the atmosphere by evapotranspiration, and the other two-fifths runs off as streamflow.

Ground Water

An appraisal of the availability of ground water is shown on figure 2 and is based on data in table 1 and interpretations of subsurface geology.

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Colors on the map represent the areal distribution of aquifers, and corresponding colors on the cross sections show the general relationship of aquifers to geologic formations. Pertinent data about the aquifers are given on figure 2. For ease of discussion, aquifers were assigned letters "A" through "E."

Figure 2. --Availability of ground water in Blount County, Alabama.

Boundaries of an aquifer coincide with changes in topography, lithology, and geologic structure and are considered as zones where significant changes in aquifer characteristics occur laterally but not as sharp divisions. For example, a steeply dipping formation may be a poor aquifer where it occurs as a hogback ridge; it may change to a good aquifer downdip in the valley adjacent to the ridge; and it may change again to a poor aquifer farther downdip at greater depth. Thus, some formations are listed under more than one aquifer on figure 2.

Thicknesses of limestone and dolomite aquifers depend on depth of weathering and cavity development which generally is less than 300 feet in Blount County. Solid bedrock below this depth yields little or no water. The entire thickness of the Pottsville Formation is shown as an aquifer; however, sandstone more than 200 feet below land surface and shale in the formation yield little or no water.

Surface Water

Average Flow

The long-term average annual flow of a stream, the arithmetic mean of all daily flows for a long period of time, is the parameter selected to appraise the availability of surface water because it represents the water yield of the drainage basin. The average flow of all streams in the county represents the quantity of water available for use that is continually replenished by rainfall. About 640 mgd (million gallons per day) or about 1.0 mgd per square mile originates in Blount County. Average-flow data in this report were obtained at five stations for which comparatively short-term streamflow records were available and at five stations where records were available for a much longer period. The records for long-term stations were adjusted to a base period of 26 years from 1940 through 1965--a period including a reasonable balance of wet and dry years. The data for short-term stations were adjusted to the same base period by correlation with averages from nearby stations having records spanning the base period. This correlation technique improves the average-flow values of short-term stations. Average flow of 10 mgd or more, adjusted to the base period, is shown on figure 3 as

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the width between lines along individual streams.

Figure 3. --Availability of surface water in Blount County, Alabama.

Variability of Streamflow

Natural streamflow consists of two principal components, direct runoff and base runoff. Direct runoff is derived from overland flow during and promptly after rainfall or snow melt; and base runoff is derived mostly from aquifers, which store water during periods of rainfall and release it slowly during periods of no rainfall.

The volume of direct runoff varies widely from storm to storm and from basin to basin reflecting numerous variables including rainfall characteristics, antecedent precipitation, and physical features of the drainage basin such as area, slope, geology, soil, vegetation, and land use. After direct runoff has ceased, streamflow is governed mostly by geologic factors which control the volume of water stored in the ground and the rate at which it is released to the streams. Thus, streamflow represents the integrated effect of many factors.

The seasonal variability of flow for Mulberry Fork near Garden City is shown on a hydrograph by months in figure 4. This hydrograph

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shows phases of the yearly cycle of streamflow: lowest flows occur in October, the month of lowest average rainfall; flows increase in November and December when evapotranspiration decreases and the winter rains begin; highest flows occur during January through April when heavy general rains fall on wet or saturated soil; flows tend to recede in May and June as rainfall diminishes and evapotranspiration increases; flows increase owing to the effect of thunderstorms in July and early August; and finally, flows recede in August and September as rains become less frequent. A significant characteristic of streamflow illustrated by figure 4 is the amount of variability above and below the average flow.

Figure 4.--Hydrograph of average monthly flows for Mulberry Fork near Garden City, Alabama.

Flow-duration data also provide a means of illustrating the runoff characteristics of a stream. A flow-duration curve with a steep slope indicates highly variable streamflow and slow release of ground water from storage. A curve with a gentle slope indicates release of water from aquifers or surface-water reservoirs which tend to equalize the flow. Highly variable streamflow in Blount County is illustrated by the flow-duration curve for Locust Fork near Cleveland (fig. 5). The curve

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for Tallahatchee Creek near Wellington in Calhoun County illustrates less variable streamflow and is shown on figure 5 to provide a comparison.

Because streamflow is variable, low flows are important in evaluating surface-water resources. The following topics are presented to aid in evaluating the availability of surface water during low flow and to estimate storage requirements that would supplement low flows.

Figure 5.--Flow-duration curves for Locust Fork near Cleveland and Tallahatchee Creek near Wellington, Alabama.

7-day Q_2

A statistical index of low flow that provides useful information on Alabama streams is the median value of the annual 7-day minimum flows--hereafter referred to as the 7-day Q_2. This parameter can be satisfactorily evaluated from a relatively small amount of streamflow data, even for streams that are not regularly gaged. The median value is a fairly stable parameter, being the average only of position in an array of items and hence unaffected by extreme values. Also, the median is a measure of normal conditions. The recurrence interval for a median value in a series of annual events is always known, being equal to 2 years in any form of frequency distribution. Finally, the 7-day period of low flow is short enough to represent flow that is available for the most part without storage, yet is long enough to suppress the effects of abnormally low transient flows of little hydrologic significance that might result from occasional regulation or from infrequent natural events.

The approximate range of the 7-day Q_2 for streams in Blount County is shown by colors on figure 3. The 7-day low flows with recurrence intervals of 10 years are given as numerical values, where known, at gaging stations.

Storage Requirements

Surface-water storage is required if the quantity of water needed exceeds streamflow during periods of low flow. Storage requirements to provide draft rates from 25 to 50 percent of average flow in Blount County can be estimated by using figure 6.

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Storage figures selected from the diagram will be adequate to provide the selected draft rate 9 of every 10 years on the average. An estimation of storage required can be made by using average flow alone and figure 6, but use of low-flow data improves the estimate.

Figure 6.--Storage required for sustained draft rates.

The following example illustrates how figure 6 is used to estimate storage requirements. The average flow at station 2-4500, Mulberry Fork at Garden City (Cullman County), is 418 mgd (fig. 3) and the 7-day Q_2 is 0.015 mgd per square mile. A draft rate of 209 mgd, or 50 percent of the average flow, is assumed to be needed at the site. These values are used in figure 6 (dashed line) to estimate a storage requirement of 121,000 acre-feet. When the 7-day Q_2 in mgd per square mile is unknown, assume it to be zero.

Figure 6 is intended for preliminary selection of possible sites where desired draft rates could be obtained by providing storage. The effects of evaporation, seepage, and sedimentation would require adjustments for final design purposes.

Chemical Quality of Water

Ground water in Blount County is of suitable chemical quality for most uses. However, for certain uses, the water may need to be treated for iron and hardness. Many water supplies from the Pottsville Formation (aquifer D) contain iron in excess of 0.3 mg/l (milligram per liter) and some are moderately hard to hard (equivalent to 61-180 mg/l as $CaCO_3$). Also, many water supplies from limestone and dolomite (aquifers A, B, and C) are moderately hard to hard (table 2). For additional chemical analyses see Alabama State Department of Public Health (1966) and Avrett (1968).

Water from streams is relatively uniform and of suitable chemical quality for most uses. The dissolved-solids content (estimated from specific conductance) generally is less than 200 mg/l. During periods of low flow, hardness of water increases and may be objectionable for certain uses. The results of chemical analyses of water from streams are given in table 3 and the location of sampling sites is shown on figure 3.

WATER USE

Water use in Blount County in 1968 was estimated to be 3.2 mgd. The principal water users, their source of supply, and quantities used are listed in table 4.

Table 4.--Summary of water use in 1968

User	Source	Average use in gallons per day
Domestic and stock	Wells, springs, and farm ponds	1,750,000
Spring Valley Farms	Wells I-8, I-9, I-10	390,000
County schools	Wells	90,000
Allgood	Spring T-2	20,000
Blountsville	Well J-2	140,000
Cleveland	Well O-6	40,000
Hayden	Well V-5	10,000
Oneonta	Well P-7 and Calvert Prong	760,000
	Total	3,200,000
Birmingham industry 1/	Inland Lake	46,000,000

1/ User is in Jefferson County but source is in Blount County.

CONCLUSIONS

The following are conclusions resulting from the study in Blount County:

1. Ground water is obtained mostly from limestone and dolomite aquifers in Sequatchie Valley and Murphrees Valley and from sandstone aquifers on Sand Mountain and Blount Mountain. (See hydrogeologic sections A-A' and B-B', fig. 2.)

2. Yields of as much as 1.4 mgd to individual wells can be expected from aquifer A, 0.7 mgd from aquifer B, 0.07 mgd from aquifer C, and 0.3 mgd from aquifer D (fig. 2).

3. An average streamflow of about 640 mgd or 1.0 mgd per square mile originates in Blount County. A large part of this flow is in Locust Fork which has an average flow of about 600 mgd where it leaves the county.

4. Parts of Locust Fork, Mulberry Fork, and Calvert Prong have median annual 7-day low flows that exceed 2 mgd and that of Locust Fork, in the southern part of the county, exceeds 10 mgd. Other streams may cease to flow during extended dry periods.

5. Ground water is of good chemical quality for most uses, but the hardness and the iron content of water from some sources may be objectionable for certain uses. Surface water is relatively uniform and is of suitable chemical quality for most uses. During periods of low flow, hardness of water may be objectionable for certain uses.

6. Water use in the county was estimated to be 3.2 mgd in 1968. Another 46 mgd is diverted from Inland Lake to Birmingham.

SELECTED REFERENCES

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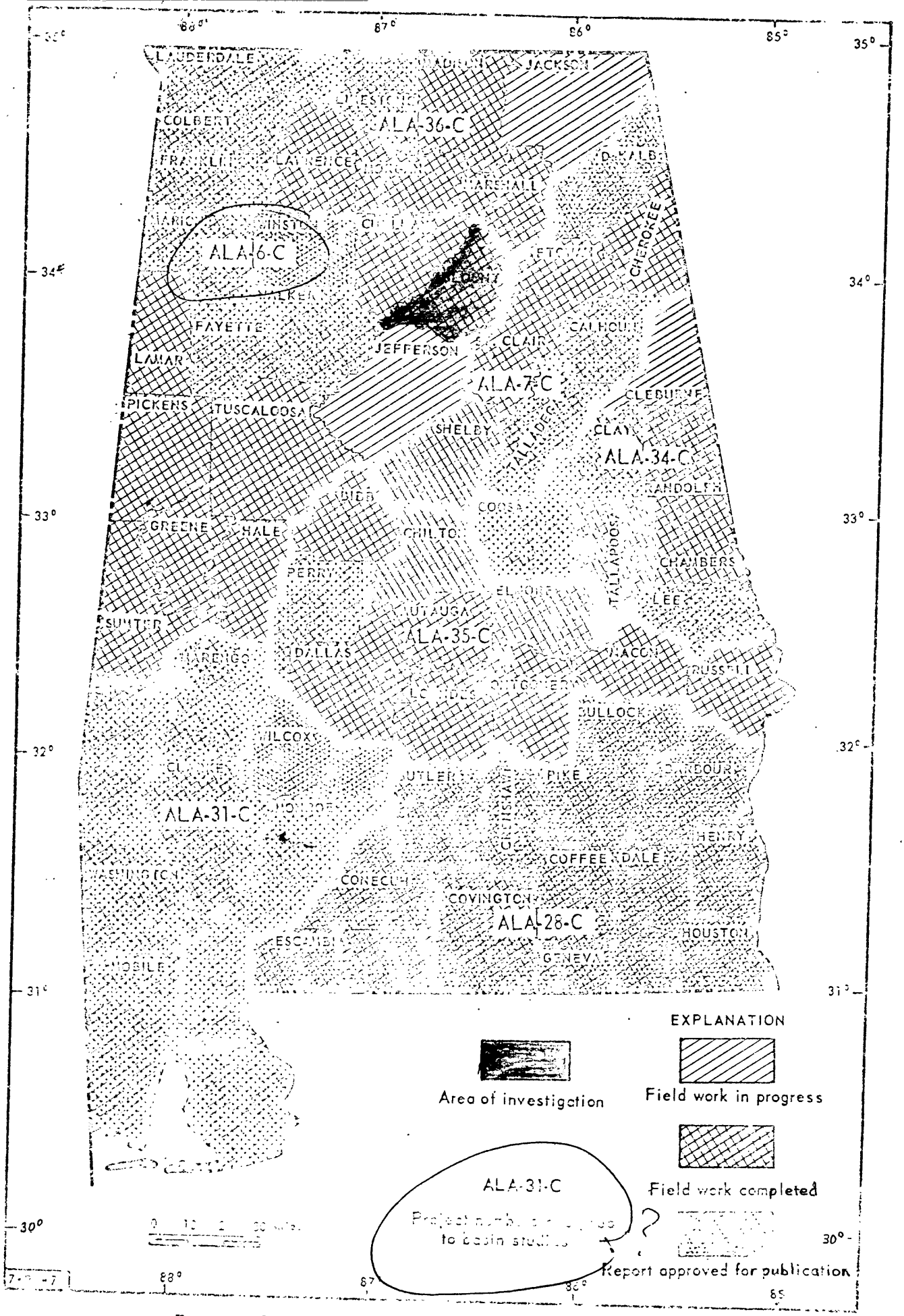

Figure 1.–Status of geologic and water-availability studies in Alabama

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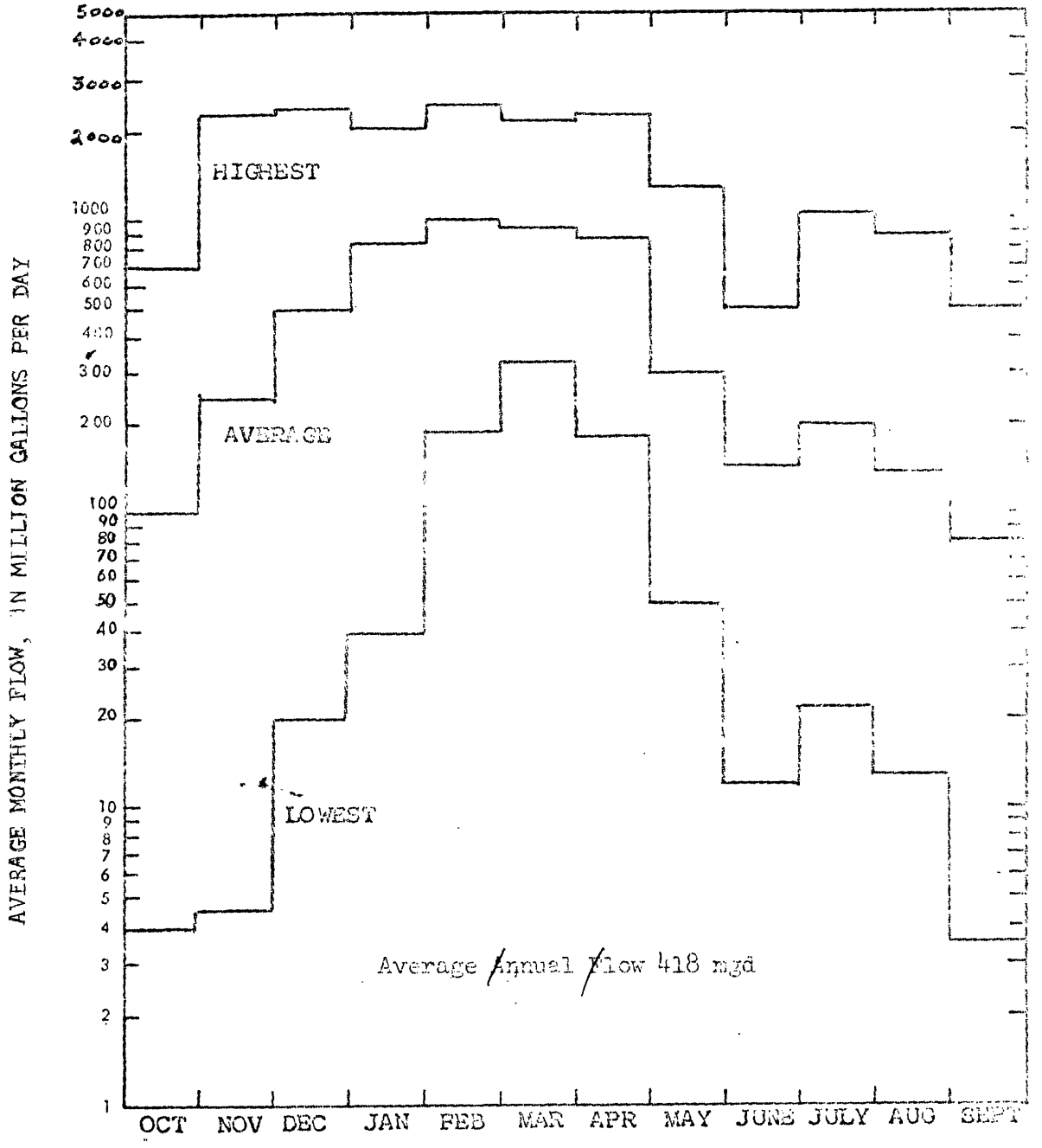

Figure 4.--Hydrographs of average monthly flows for Mulberry Fork near Garden City, Alabama.

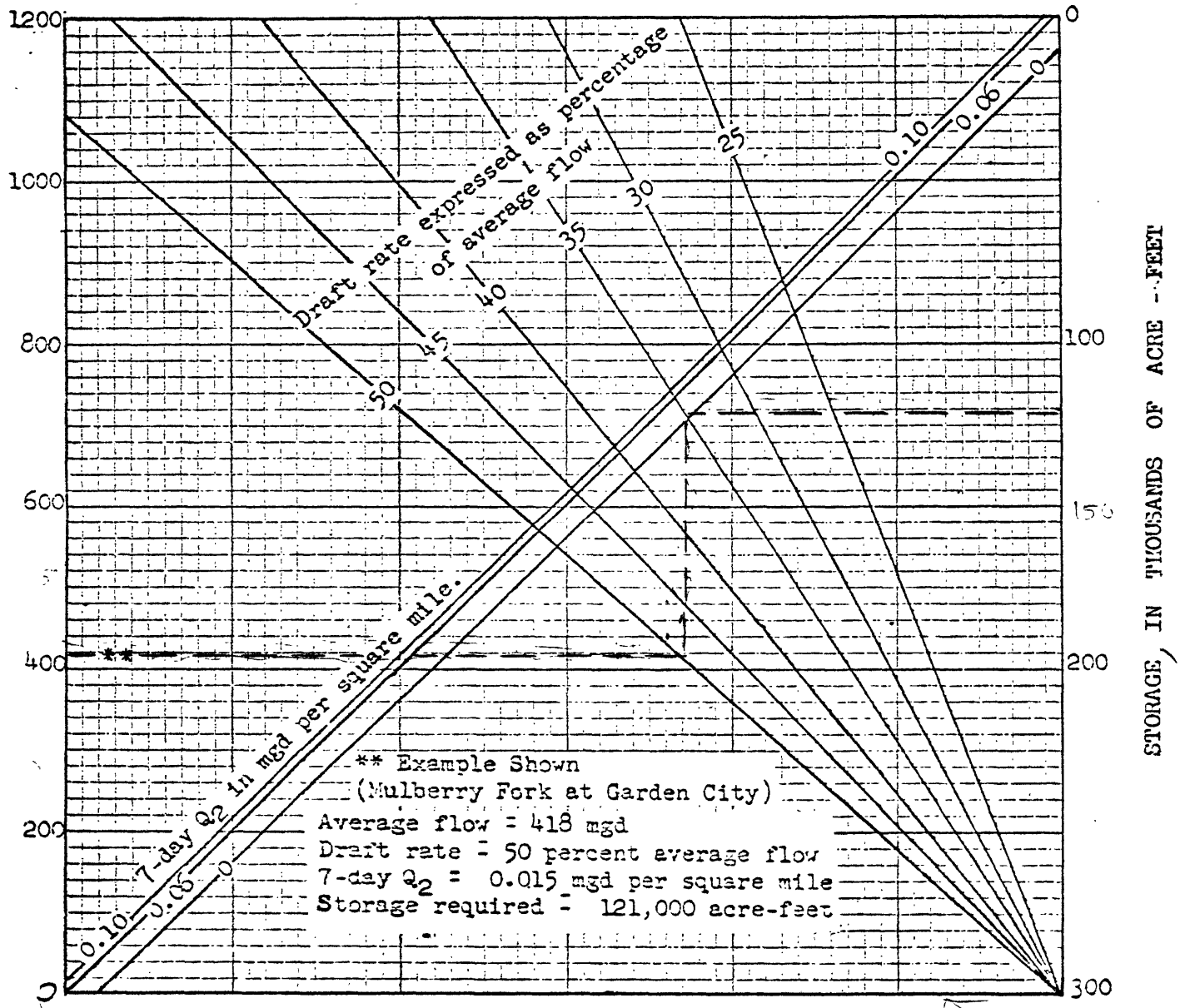

Figure 6. - Storage required for sustained draft rates.

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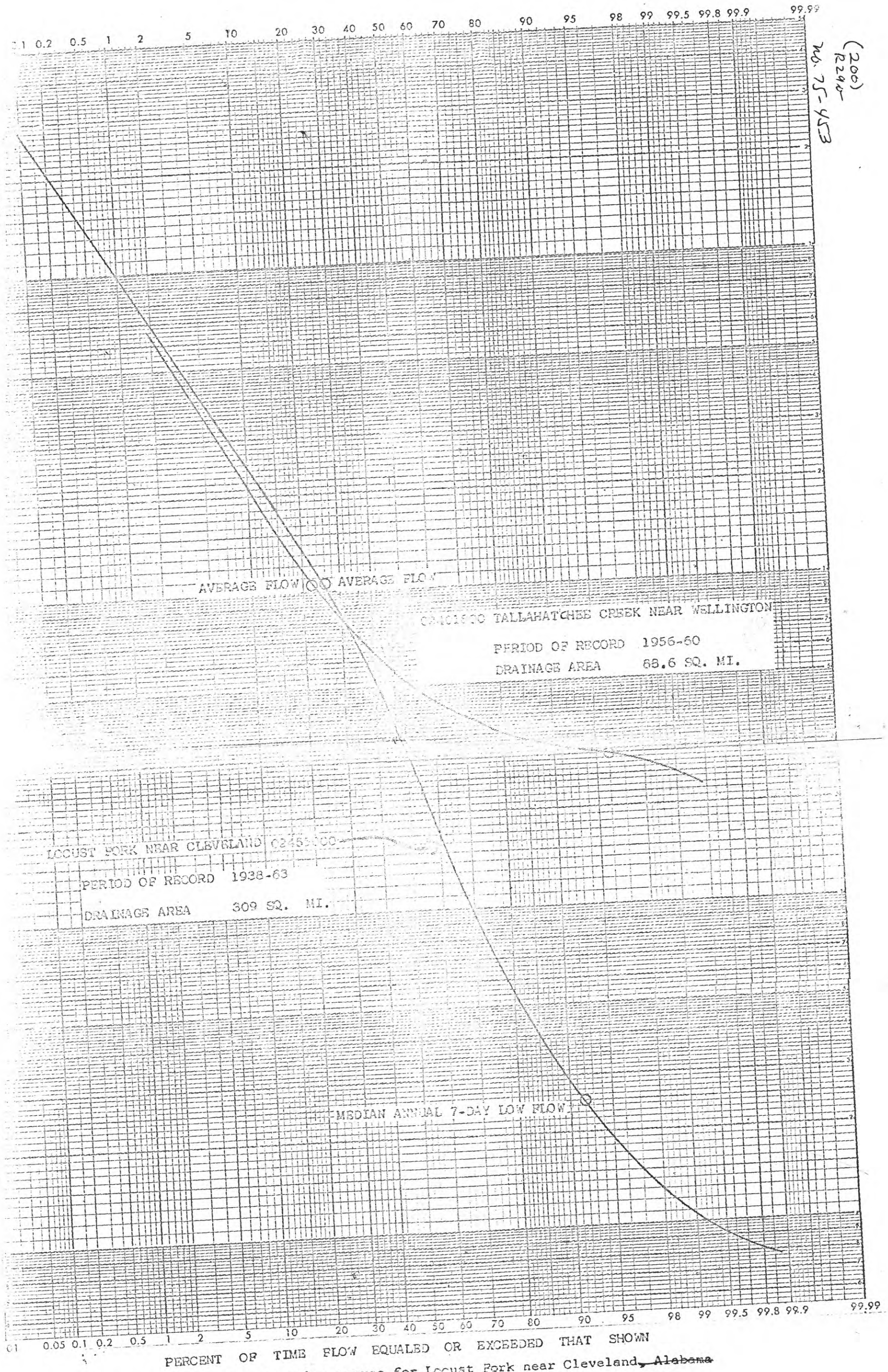

Figure 5. - Flow-duration curves for Locust Fork near Cleveland, ~~Alabama~~ and Tallahatchee Creek near Wellington, Alabama

Table 1.--Records of wells and springs in Blount County

Well or spring: Numbers correspond to those on figure 2 and in table 2.

Water-bearing unit: OGu, Chepultepec Dolomite and Copper Ridge Dolomite undifferentiated; Mtfm, Tuscumbia Limestone, Fort Payne Chert, and Maury Formation undifferentiated; Mh, Hartselle Sandstone; Mb, Bangor Limestone; Ppv, Pottsville Formation.

Altitude: Taken from topographic maps or determined with aneroid barometer.

Water level: Reported water levels are given in feet; measured water levels are given in feet and tenths.

Method of lift: B, bucket; F, flow; J, jet; N, none; P, piston; S, submergible, T, turbine.

Use of water: D, domestic; Irr, irrigation; Ind, industrial; N, none; P, public; S, stock.

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
A-1	Hopewell Church....	.....	...	65	6	Ppv	1,000	11.6	9- 7-66	B	D	
A-2	Guy Hopson.....	C. B. Dalrymple....	1965	81	6	Mtfm	700	30	1965	J	D	
B-1	Ira Holley.....	.....	...	115	6	Ppv	930	70	1966	J	D	
D-1	Blount County Board of Education.	Campbell Bros. Drilling Co.	1949	170	6	Mtfm	890	100	1966	J	P	Supplies 200 students at Summit School and 2 homes.
D-2	Hess Oil Co.....	.....	...	53	6	Mtfm	825	48.8	9- 7-66	J	D	
D-3	Blount County Board of Education.	.....	...	77	6	Ppv	830	42.6	8-18-66	J	P	Supplies Rock Spring School.

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
BB-3	Blount County Board of Education.	.....	1960	70	6	...	750	15	1966	S	P	Supplies Remlap School.
BB-4	F. G. Bell.....	.....	...	735	4	Ppv	475	+20.0	9-26-66	N	D	(T. S. Davidson Well, Johnston, 1933, pt. 2, table 3, no. 23). Estimated flow 20 gpm on 9-26-66. Supplies cabins in summer.
BB-5	G. T. Posey.....	.....	...	Spring	...	Ogu	650	...	...	F	S	(Village Spring, Johnston, 1933, pt. 2, table 4, no. 35). Reported flow 150 gpm in August 1928; measured flow 180 gpm on 3-13-67.
CC-1	Blount County Board of Education.	.....	...	42	6	Ppv	1,060	30	1966	J	P	Supplies Blount Highlands School.
DD-1	W. F. Tolbert.....	.....	1961	54	6	Ppv	1,240	+1.0	9-20-66	B	D	

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
D-4	Mrs. Will Roberts..	.....	...	Spring	...	Mtfm	790	...	...	F	Ind	(Aldridge Spring, Johnston, 1933, pt. 2, table 4, No. 27). Supplies minnow hatchery. Reported flow 200 gpm in August 1928; measured flow 320 gpm on 3-15-67.
D-5	Ottis Shed.....	.....	...	Spring	...	...	730	...	...	F	D	(Vanzandt Spring, Johnston, 1933, pt. 2, table 4, No. 25 (Blue Spring on topographic map). Reported flow 300 gpm in August 1928; measured flow 490 gpm on 3-15-67.
E-1	Blount County Board of Education.	.....	...	38	6	Ppv	825	23.9	8-19-66	J	P	Supplies Eargle School.
E-2	Bains Oil Co.....	.....	...	78	6	Mtfm	800	51.3	8-24-66	J	D	
E-3	Glynn Debter.....	Raymond Brown.....	1961	200	6	Ppv	890	25	1966	J	D,S	
E-4	Grady Whitley.....	.....do.....	1961	74	6	Ppv	800	20.8	9-27-66	J	D	
E-5	Charlie Nash.....	.....	...	70	6	Ppv	790	15.7	8-24-66	J	D	Supplies Cafe.
F-1	W. A. Gregory.....	.....	...	115	6	Ppv	805	78	1928	J	D	
G-1	Blount County Board of Education.	.....	...	160	6	Ppv	805	38.6	8-19-66	J	P	Supplies Snead School.
G-2	Altoona Sand Products, Inc.	Interstate Drillers	1966	78	8	Mtfm	900	12.4	8-31-66	N	N	Casing: 8-in from surface to 40 ft; none below. Reported yield 30 gpm in 1966.

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
H-1	Ernest McCall.....	.....	...	60	6	Ppv	780	20	1966	J	D	Supplies cafe and 2 homes.
H-2	O. H. Thomas.....	Interstate Drillers	1966	90	6	Ppv	860	30	1966	J	D	
H-3	Blount County Board of Education.	.....	1960	340	6	Ppv	770	184	1966	P	P	(Clarence High School, Johnston, 1933, pt. 2, table 3, no. 6). School has been renamed Susan Moore and had about 900 students in 1966. Well depth was 66 ft prior to 1966.
H-4	Woodmen of the World.	Herbert Boren.....	...	108	6	Ppv	785	41.6	8-24-66	S	P	Supplies summer youth camp.
H-5	Harlon Wright.....	.....do.....	...	68	6	Ppv	815	8	1966	J	D	
H-6	Wilson Chapel.....	.....	...	89	6	Ppv	865	19.9	9- 7-66	J	D	
I-1	.....	Ben Stein.....	1952	865	...	...	907	...	...	N	N	Oil test (McGlamery, 1955, p. 18-21), permit no. 319, referred to as Ibson Littleton no. 1.
I-2	.....	R. A. Oles.....	...	...	...	...	1,030	...	...	N	N	Oil test, permit no. 580, referred to as Paul Freeman no. 1.
I-3	.....	Ben Stein.....	1952	1,120	...	...	772	...	...	N	N	Oil test (McGlamery, 1955, p. 22-25), permit no. 335, referred to as B. M. Carr no. 1.
I-4	.....	Pulver and Davis...	1950	870	...	...	791	...	...	N	N	Oil test (McGlamery, 1955, p. 15-18), permit no. 203, referred to as Paul Freeman no. 1.
I-5	R. L. Burgess.....	.....	...	Spring	...	...	...	...	...	F	P, Irr	Burgess Spring. Supplies swimming pool, recreational area, and irrigation Measured flow 390 gpm on 3-17-67.

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
I-6	City of Blountsville	.....	...	Spring	...	Mtfm	710	...	...	F,T	N	(Town of Blountsville Spring, Johnston, 1933, pt. 2, table 4, no. 26). Measured flow 90 gpm on 3-15-67.
I-7	Blount County Board of Education.	.....	...	53	6	Ppv	750	22.2	8-24-66	J	N	Supplied Royal School until school was abandoned in 1966.
I-8	Spring Valley Farms	H. W. Peerson Drilling Supply Co.	1964	184	12	Mtfm	780	11.2	8-23-66	T	Ind	Casing: 12-inch from surface to 90 feet; slotted from 70 to 90 ft. Reported drawdown 45 ft after 24 hours pumping 700 gpm in October 1964. (See remarks well I-10).
I-9	.....do.....	.....do.....	1964	165	12,8,6	Mtfm	780	10	1964	T	Ind	Casing: 12-in from surface to 120 ft; 8-in from 116 to 152 ft; 6-in from 148 to 165 ft; slotted from 148 to 165 ft. Reported drawdown 29 ft after 24 hours pumping 1,080 gpm in November 1964. (See remarks well I-10).
I-10	.....do.....	.....do.....	1965	185	12	Mtfm	780	22.3	8-23-66	T	Ind	Reported yield 650 gpm. Wells I-8, I-9, and I-10 are used for poultry processing plant. Maximum daily water use of processing plant is about 390,000 gals. Two other wells were drilled during development of water supply for plant but were abandoned owing to turbidity.

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
J-1	Buel Young.....	.....	...	36	6	Ppv	...	24	1966	J	D	
J-2	City of Blountsville	H. W. Peerson Drilling Supply Co.	1964	128	8	Mtfm	690	62	1964	T	P	Casing: 12-in from surface to 40 ft; 8-in from 40 to 90 ft. Reported drawdown 1 ft after 24 hours pumping 300 gpm in January 1964. Maximum daily water use for city is 150,000 gallons.
J-3	Blount County Board of Education.	.....	1925	94	6	Mtfm	700	77	1953	J	P	Casing: 6-in from surface to 93 ft. Reported yield about 40 gpm. Supplies J. B. Pennington High School; maximum daily water use about 25,000 gallons.
J-4	E. I. Warren.....	.....	...	Spring	...	Mtfm	580	...	...	F	S	(Big Spring, Johnston, 1933, pt. 2, table 4, no. 28). Reported flow 1,800 gpm in August 1928; measured flow 2,360 gpm 11-6-69 and 3,670 gpm 3-27-70.
J-5	Bruce Ratliff.....	.....	1966	89	6	Mh	...	69	1966	J	D	
K-1	Free Holiness Church	.....	...	36	6	Ppv	...	5.0	9- 1-66	B	D	
M-1	T. H. Walker.....	.....	1965	71	6	Mh	505	+ .5	9- 2-66	J	D	Estimated flow 10 gpm on 9-2-66.
M-2	Jim French.....	.....	...	22	6	Mb	475	1.5	9- 2-66	N	D	Estimated flow 3 gpm on 9-2-66. Formerly supplied water for 10-unit motel and swimming pool.
M-3	Buzz Oil Co.....	.....	...	56	6	Mb	475	10.7	9- 2-66	J	D	

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
M-4	Oak Grove Church..	.....	1966	75	6	Ppv	805	26.8	9- 1-66	J	D	
N-1	W. C. Copeland....	.....	1963	195	6	Ppv	513	41.2	9- 2-66	J	P	Supplies cafe and service station.
N-2	Blount County Board of Education.	.....	...	63	6	Ppv	505	45.5	8-26-66	J	P	Supplies Nectar School.
O-1	Leon Owensby.....	.....	1954	200	6	Ppv	...	60	1966	J	P	Supplies 12-unit motel and cafe.
O-2	General Thomas....	.....	...	95	6	Ppv	...	70	1966	J	P	Supplies cafe and home.
O-3	Willie Sterling...	Apel Machine and Supply Co.	...	95	6	Ppv	610	18.8	9- 8-66	J	P	Supplies cafe.
O-4	Blount County Board of Education.	.....	...	79	6	Ppv	540	48.4	8-19-66	S	P	Supplies Cleveland High School.
O-5	.....do.....	Lynn McPherson Drilling Co.	1964	106	6	Ppv	540	40	1964	S	D	Supplies Board of Education garage.
O-6	City of Cleveland.	Campbell Drilling Co.	1967	200	8	Ppv	507	8.0	12-14-67	T	P	Casing: 8-in from surface to 62 ft; none below. Reported drawdown 6.1 ft after 24 hours pumping 150 gpm.
P-1	W. V. Campbell....	.....	...	115	6	Ppv	895	+ .5	9-13-66	J	D	
P-2	Mrs. Henry Loretta Garner.	.....	...	Spring	...	Ppv	780	...	...	J	D	Estimated flow 6 gpm on 9-13-66.
P-3	J. W. Blalock.....	.....	...	31	36	Cgu	790	20	1966	J	D	(W. J. Blalock well, Johnston, 1933, pt. 2, table 3, no. 15).

Table 1.--Records of wells and springs in Blount county--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
P-4	Oneonta Flight Services Inc.	.....	1966	54	4	Ppv	1,140	41.4	9-13-66	N	D	Well is to be used as water supply for airport office.
P-5	City of Oneonta....	H. W. Peerson Drilling Supply Co.	1924	163	8	Ou	860	70	1928	T	N	(Alabama Water Service Corp. well, Johnston, 1933, pt. 2, table 3, no. 16). Public supply from 1924 to 1950. Estimated yield 50 gpm.
P-6	.....do.....	.....do.....	1926	180	10	Ou	860	85	1928	T	N	Alabama Water Service Corp. well, Johnston, 1933, pt. 2, table 3, no. 17). Casing: 10-in from surface to 500 ft; well plugged at 180 ft; casing perforated just above 180 ft. Public supply from 1924 to 1950. Estimated yield 40 gpm.
P-7	.....do.....	.....do.....	1947	196	12,10	Ou	870	70	1950	T	P	Casing: 12-in from surface to 90 ft; 10-in from 90 to 175 ft; slotted from 145 to 175 ft. Drawdown 43 ft after 24 hours pumping 320 gpm. Well inoperative from 1947 to October 1966.
P-8	Blount County Board of Education.	.....do.....	1946	353	10,8	Ou	858	25	1946	N	N	Abandoned. Reported yield 30 gpm in 1946.
Q-1	Floyd Hanby.....	.....	...	Spring	...	Ou	870	...	...	F	N	Known as Maynor Spring. Measured flow 15 gpm on 3-14-67.

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
R-1	Preston Blakely....	.....	...	...	...	Ppv	980	...	...	F	S	Known as Head Spring. Measured flow 30 gpm on 3-14-67.
S-1	City of Oneonta....	H. W. Peerson Drilling Supply Co.	1954	272	10	OGu	875	130	1954	T	N	Reported yield 180 gpm; water reported to be turbid.
S-2	Blount County Board of Education.	Interstate Drillers.	1955	298	8	Ppv	1,170	60	1966	S	P	Supplies Appalachian High School. Inadequate during dry periods.
S-3	.....do.....	.....do.....	1966	295	8	Ppv	1,170	60	1966	S	P	Supplies Appalachian Grade School.
S-4	James Holloway.....	.....do.....	...	102	6	Ppv	985	+ 3.0	8-19-66	F	N	Estimated flow 3 gpm on 8-19-66.
T-1	J. C. Dobbs.....	.....	...	Spring	...	OGu	750	...	...	F	D	(Gibson Spring, Johnston, 1933, pt. 2, table 4, no. 32). Reported flow 350 gpm in October 1928; measured flow 370 gpm on 3-14-67.
T-2	City of Allgood....	.....	...	Spring	...	OGu	760	...	...	F,T	P	Known as Allgood Spring. Measured flow 190 gpm on 3-14-67. Supplies about 200 people. Maximum daily use is about 20,000 gals.
T-3	Fred J. Walker.....	.....	...	Spring	...	OGu	592	...	...	F	D	Known as Walker Spring. Measured flow 120 gpm on 3-13-67.
T-4	Jay Evans.....	.....	...	Spring	...	OGu	760	...	...	F	D	Known as Clear Spring. Estimated flow 100 gpm on 8-9-66.
U-1	Concord Church.....	.....	...	83	6	Ppv	460	+ .4	9-20-66	J	D	

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
U-2	Blount County Board of Education.	.....	...	70	6	Ppv	545	6.2	8-22-66	S	P	Supplies Locust Fork School.
U-3	Tabernacle Church..	.....	...	49	6	Ppv	560	12.4	9-20-66	J	D	
U-4	Louise Honeycutt...	.....	...	52	6	Ppv	475	15	1966	J	P	Supplies cafe.
U-5	.....do.....	.....	1966	49	6	Ppv	475	15	1966	J	P	Supplies launderette.
V-1	W. M. Drennen.....	.....	...	Spring	...	Mtfm	580	...	...	F	N	(Blount Spring, Johnston, 1933, pt. 2, table 4, no. 30). Reported flow 10 gpm in August 1928; measured flow 70 gpm on 3-13-67.
V-2	Jack Cole.....	H. W. Peerson Drilling Supply Co.	1950	300	6	Mtfm	750	...	...	N	N	Abandoned; dry hole.
V-3	.....	L. C. Madison.....	...	235	...	Mtfm	613	20	...	N	N	Oil test, permit no. 688, referred to as Shell-Drennen no. 1.
V-4	W. M. Drennen.....	.....	...	Spring	...	Ppv	650	...	...	F	N	Known as Chalybeate Spring. Estimated flow 10 gpm on 8-10-66.
V-5	City of Hayden.....	H. W. Peerson Drilling Supply Co.	1952	480	8	Ppv	720	80	1966	T	P	Supplies about 190 people. Reported yield 30 gpm. Estimated maximum daily water use is 12,000 gals.
V-6	Blount County Board of Education.	.....do.....	1949	214	8	Ppv	510	60	1949	T	P	Supplies Hayden School. Reported yield 30 gpm in 1951.

Table 1.--Records of wells and springs in Blount County--Continued

Number	Owner	Driller	Year completed	Depth of well (feet)	Diameter of well (inches)	Water-bearing unit	Altitude of land surface (feet)	Water level		Method of lift	Use of water	Remarks
								Above (+) or below land surface (feet)	Date of measurement			
W-1	Eddie Burns.....	.....	...	Spring	...	Mtfm	440	...	..	F,J	D	Estimated flow 5 gpm on 9-21-66.
W-2	Stuckey's Inc.....	Apel Machine and Supply Co.	1964	328	6	Ppv	460	...	...	S	P	Supplies water for gift shop and lunch counter. Supply inadequate during fall months.
W-3	Blount County Board of Education.	.....	...	70	6	Ppv	455	57.0	8-22-66	P	P	Supplies Sulphur Springs School.
W-4	.....	Col. J. A. Montgomery.	1888	1,935	...	...	575	...	...	N	N	Oil test (Bowles, 1941, p. 39-40), referred to as Reed's Gap no. 1.
W-5	Hubert Richter.... (Rickwood Caverns).	.....	...	Cave	...	Mb	...	...	...	J	P	Pump intake is in caverns. Supplies swimming pool and home.
W-6	.....	H. A. Drummond....	1940	1,549	...	...	365	...	...	N	N	Oil test (Bowles, 1941, p. 38-39), referred to as Well no. 1.
W-7	Blount County Board of Education.	.....	...	75	6	Ppv	985	57	1966	S	P	Supplies Mt. High School.
Y-1	Abbott Pountry Farms	Carl O. Baird.....	1960	300	6	Ppv	405	56.5	9-26-66	S	S	
Z-1	A. R. Russell.....	Apel Machine and Supply Co.	1959	85	6	Ppv	580	30	1966	J	D	
BB-1	Blount County Board of Education.	.....	...	116	6	Ppv	550	28.6	8-26-66	J	P	Supplies Sterling School.
BB-2	O. B. Weston.....	.....	...	Spring	...	Mb	700	...	...	F,J	D	(Weston Spring, Johnston, 1933, pt. 2, table 4, no. 33). Reported flow 30 gpm in August 1928; measured flow 30 gpm on 3-13-67.

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no. 75-453
(5 sheets)

Table 2.--Chemical analyses of water from wells and springs in Blount County

Numbers correspond to those on figure 2 and in table 1.

Water-bearing unit: OGu, Chepultepec Dolomite and Copper Ridge Dolomite undifferentiated; Mtfm, Tuscumbia Limestone, Fort Payne Chert, and Maury Formation undifferentiated; Mh, Hartselle Sandstone; Mb, Bangor Limestone; Ppv, Pottsville Formation.

					Milligrams per liter																	
Number	~~Stream~~ or well owner	Date of collection	Water-bearing unit	~~Stream discharge (mgd)~~ or well depth (feet)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$		Specific conductance (micromhos at 25° C)	pH	Temperature	
																		Calcium, magnesium	Noncarbonate			°C	°F
A-1	Hopewell Church...	10- 4-66	Ppv	65		0.70					18	0		4.8				12	0	50	6.5	17	63
A-2	Guy Hopson.....	10- 4-66	Mtfm	81		.03					120	0		1.8				102	4	192	7.1	17	62
B-1	Ira Holley.....	10- 4-66	Ppv	115		44					20	0		4.6				18	2	56	6.0	..	..
D-1	Blunt County Boerd of Education.	10- 4-66	Mtfm	170		.19					188	0		8.6				168	14	326	7.8	17	62
D-2	Hess Oil Co.....	10- 4-66	Mtfm	53		.09					146	0		4.6				125	5	245	7.5	18	64
D-3	Blount County Board of Education.	10- 4-66	Ppv	77		2.4					64	0		2.0				42	0	112	7.0	17	63
D-4	Mrs. Will Roberts.	3-15-67	Mtfm	Spring		.04					44	0		1.6				38	2	74	6.9	16	60
D-5	Ottis Shed.....	3-15-67	...	Spring		.05					68	0		2.2				60	4	121	6.9	16	60
E-1	Blount County Board of Education.	10- 4-66	Ppv	38		4.5					62	0		2.2				45	0	108	6.8	17	63
E-2	Bains Oil Co.....	10- 4-66	Mtfm	78		.03					136	0		2.8				115	3	221	7.7	16	62
E-3	Glynn Debter.....	10- 4-66	Ppv	200		.07					198	0		3.6				155	0	311	7.5	18	64
E-4	Grady Whitley.....	10- 4-66	Ppv	74		2.5					26	0		3.0				18	0	49	6.8	17	62
E-5	Charlie Nash.....	10- 4-66	Ppv	70		.56					190	0		4.4				140	0	310	6.9	17	62
F-1	W. A. Gregory.....	10- 4-66	Ppv	115		.31					2	0		8.4				18	16	67	5.7	17	62
G-1	Blount County Board of Education.	10- 4-66	Ppv	160		.42					132	0		2.2				75	0	214	7.3	17	63
G-2	Altoona Sand Products, Inc.	10- 4-66	Mtfm	78		.36					32	0		2.0				28	2	62	7.5	17	62

Table 2.--Chemical analyses of water from wells and springs in Blount County--Continued

Number	~~Stream name or~~ well owner	Date of collection	Water-bearing unit	~~Stream discharge (mgd) or~~ well depth (feet)	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
H-1	Ernest McCall.....	10- 4-66	Ppv	60		5.9					28	0		6.6				35	12	89	6.7	17	62
H-2	C. H. Thomas.....	10- 4-66	Ppv	90		12					64	0		2.0				32	0	116	6.7	17	63
H-3	Blount County Board of Education.	10- 5-66	Ppv	340		.24					192	0		5.4				145	0	325	7.0	16	61
H-4	Woodmen of the World.	10- 5-66	Ppv	108		13					70	0		3.8				50	0	133	6.7	17	62
H-5	Harlon Wright.....	10- 5-66	Ppv	68		.42					74	0		3.4				65	4	146	6.8	17	63
H-6	Wilson Chapel.....	10- 5-66	Ppv	89		.91					18	0		4.8				15	0	47	5.9	17	63
I-5	R. L. Burgess.....	3-17-67	...	Spring		.05					120	0		2.4				100	2	195	7.2	16	60
I-6	City of Blountsville	3-15-67	Mtfm	Spring		.03					46	0		1.8				45	7	89	6.7	16	60
I-8	Spring Valley Farms.	10- 5-66	Mtfm	184		1.8					102	0		2.0				85	1	166	7.6	17	62
I-9	.....do.....	10- 5-66	Mtfm	165		.03					128	0		2.8				110	5	208	7.7	16	61
I-10	.....do.....	10- 5-66	Mtfm	185		.04					152	0		2.4				130	5	242	7.9	17	62
J-1	Buel Young.....	10- 5-66	Ppv	36		.30					20	0		6.0				18	2	56	7.1	18	65
J-2	City of Blountsville	10- 5-66	Mtfm	128		.03					106	0		3.6				100	13	198	7.5	16	61
J-3	Blount County Board of Education.	10-12-66	Mtfm	94		.03					142	0		3.8				128	12	247	7.9	17	62
J-4	E. I. Warren.....	3-14-67	Mtfm	Spring		.05					116	0		3.8				105	10	204	7.3	16	60
J-5	Bruce Ratliff.....	10- 5-66	Mh	89		.63					22	0		1.2				22	4	50	6.7	18	64

Table 2.--Chemical analyses of water from wells and springs in Blount County--Continued

Number	Stream name or well owner	Data of collection	Water-bearing unit	Stream discharge (mgd) or well depth (feet)	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
K-1	Free Holiness Church.	10- 5-66	Ppv	36		0.06					6	0		2.4				10	5	29	6.8	19	66
M-1	T. H. Walker.....	10- 5-66	Mh	71		.05					64	0		2.8				58	6	117	6.6	17	62
M-2	Jim French.....	10- 5-66	Mb	22		.25					240	0		2.6				162	0	363	7.9	17	63
M-3	Buzz Oil Co.....	10- 5-66	Mb	56		4.5					170	0		3.2				138	0	275	7.3	17	62
M-4	Oak Grove Church..	10- 6-66	Ppv	75		.28					34	0		2.8				22	0	66	6.7	16	61
N-1	W. C. Copeland....	10- 6-66	Ppv	195		.05					188	0		7.2				98	0	306	7.6	17	63
N-2	Blunt County Board of Education.	10- 6-66	Ppv	63		.36					158	0		11				112	0	298	7.2	17	63
O-1	Leon Owensby.....	10- 6-66	Ppv	200		.84					64	0		4.4				52	0	127	6.6	17	63
O-2	General Thomas....	10- 6-66	Ppv	95		1.9					170	0		1.2				128	0	277	7.2	17	63
O-3	Willie Sterling...	10-12-66	Ppv	95		.58					298	10		2.4				88	0	466	8.3	17	63
O-4	Blount County Board of Education.	10- 6-66	Ppv	79		.63					286	0		7.2				120	0	435	7.5	17	63
O-5	.....do.....	10- 6-66	Ppv	106		.09					160	0		13				118	0	307	7.1	17	63
1/ O-6	City of Cleveland.	12- 9-67	Ppv	200		.15					268	8		7.0				69	...	...	8.0	17	63
P-1	W. V. Campbell....	10- 5-66	Ppv	115		.25					186	0		1.8				145	0	279	7.7	17	63
P-3	J. W. Blalock.....	10-12-66	OSu	31		.28					68	0		40				112	56	374	7.2	18	64
P-7	City of Oneonta...	10-12-66	OSu	196		.03					170	0		7.4				150	11	295	8.0	17	62
Q-1	Floyd Hanby.....	3-14-67	OSu	Spring		.07					94	0		3.2				80	3	164	7.1	16	60

Table 2.--Chemical analyses of water from wells and springs in Blount County--Continued

Number	well owner	Date of collection	Water-bearing unit	well depth (feet)	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Non-carbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
R-1	Preston Blakely...	3-14-67	Ppv	...		0.57					6	0		5.8				15	10	62	6.1	17	62
S-2	Blount County Board of Education.	10- 6-66	Ppv	298		1.1					62	0		3.8				42	0	112	7.1	18	64
S-4	James Holloway....	10- 6-66	Ppv	102		.69					70	0		3.2				48	0	119	7.1	18	65
T-1	J. C. Dobbs.....	3-13-67	OGu	Spring		.04					128	0		2.0				110	5	206	7.2	16	61
T-2	City of Allgood...	3-14-67	OGu	Spring		.06					108	0		2.6				88	0	173	7.2	16	60
T-3	Fred J. Walker....	3-13-67	OGu	Spring		.05					82	0		1.8				70	3	133	7.0	14	58
U-1	Concord Church....	10- 6-66	Ppv	83		.51					192	0		2.2				95	0	286	7.6	17	63
U-2	Blount County Board of Education.	10- 6-66	Ppv	70		.30					166	0		23				108	0	333	7.4	17	62
U-3	Tabernacle Church.	10-11-66	Ppv	49		12					44	0		4.4				38	2	92	7.2	17	63
U-4	Louise Honeycutt..	10-11-66	Ppv	52		.84					240	0		7.0				175	0	441	8.2	17	63
U-5	.....do.....	10-11-66	Ppv	49		1.2					238	14		7.2				182	0	457	8.5	17	63
V-1	W. M. Drennen.....	3-13-67	Mtfm	Spring		.14					122	0		60				130	30	453	7.2	14	57
V-5	City of Hayden....	10-11-66	Ppv	480		.27					156	6		2.8				78	0	263	8.4	16	61
V-6	Blount County Board of Education.	10-11-66	Ppv	214		.45					170	0		4.4				85	0	280	8.2	16	61
W-2	Stuckey's Inc.....	10-11-66	Ppv	328		.24					282	0		5.8				265	34	569	7.9	17	63
W-3	Blount County Board of Education.	10-11-66	Ppv	70		.57					368	30		9.2				15	0	698	8.7	17	63

Table 2.--Chemical analyses of water from wells and springs in Blount County--Continued

Number	~~Station name~~ well owner	Date of collection	Water-bearing unit	~~Stream discharge (mgd)~~ well depth (feet)	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
W-5	Hubert Richter (Rickwood Caverns).	10-11-66	Mb	Cave		0.06					190	0		1.4				160	4	287	8.1	17	62
W-7	Blount County Board of Education.	10-11-66	Ppv	75		.09					146	0		1.2				110	0	225	8.1	17	63
Y-1	Abbott Poultry Farms.	10-11-66	Ppv	300		.16					154	0		5.4				22	0	271	8.1	16	61
7-1	A. R. Russell.....	10-11-66	Ppv	85		14					34	0		2.2				25	0	80	7.2	17	63
BB-1	Blount County Board of Education.	10-11-66	Ppv	116		11					118	0		3.2				72	0	198	7.9	17	63
BB-2	O. B. Weston.....	3-13-67	Mb	Spring		.18					158	0		2.2				92	0	247	7.6	17	62
BB-3	Blount County Board of Education.	10-11-66	...	70		.05					172	0		1.4				140	0	257	8.2	17	62
BB-4	F. G. Bell.....	10-11-66	Ppv	735		.67					202	0		4.2				60	0	310	8.2	15	59
BB-5	G. T. Posey.....	3-13-67	Ogu	Spring		.03					162	0		.8				112	0	246	7.9	16	61
CC-1	Blount County Board of Education.	10-11-66	Ppv	42		.99					28	0		4.2				22	0	59	7.5	17	63
DD-1	W. F. Tolbert.....	10-11-66	Ppv	54		20					42	0		2.4				30	0	73	7.4	18	65

1/ Analysis by Pittsburgh Testing Laboratory.

(200)
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No. 75-453
(4 sheets)

Table 3.--Chemical analyses of water from streams in Blount County

(Station numbers correspond to those on figure 3)

Number	Stream name ~~or well name~~	Date of collection	Water-bearing unit	Stream discharge (mgd) ~~or well depth (feet)~~	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Non-carbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
2450000	Mulberry Fork near Garden City.	10- 4-65		15.0							86	0		14				60	0	220	7.5	18	64
		11-17-65		9.0							108	0		7.2				82	0	211	7.9	13	55
		12-27-65		23.1							48	0		8.6				52	13	145	7.2	7	44
		1-28-66		171							26	0		5.6				28	7	74	8.0	4	39
		3-14-66		350							16	0		5.6				20	7	54	6.3	13	56
		4-19-66		63.4							22	12		4.4				38	0	97	8.5	18	65
		6- 2-66		192							24	0		3.6				25	5	60	7.3	19	66
		7-12-66		25.2							52	0		4.4				45	2	105	7.2	30	86
		10-12-66		58.9							34	0		5.2				30	2	85	7.2	17	63
		11-22-66		163							24	0		4.8				22	2	66	7.1	11	52
		1-17-67		326							18	0		4.8				20	5	60	7.2	6	42
		2-15-67		301							20	0		4.4				20	4	60	6.5	8	46
		2-21-67		2,680							10	0		3.0				15	7	47	6.4	8	46
		3-25-67		153							22	0		7.2				22	4	73	7.2	14	57
		3-28-67		128							24	0		5.0				22	2	67	7.1	17	62
		4-26-67		5,730							8	0		4.0				8	1	35	6.3	16	61
		5-10-67		588							15	0		2.4				14	2	51	6.2	21	70
		7-10-67		1,260							14	0		2.6				14	3	49	7.0	22	72
		8- 9-67		1,130							17	0		2.8				16	2	62	6.4	23	74

Table 3.--Chemical analyses of water from streams in Blount County--Continued

Number	Stream name	Date of collection	Water-bearing unit	Stream discharge (mgd)	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Non-carbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
2455000	Locust Fork near Cleveland.	11- 9-65		5.2							106	0		7.0				92	5	196	7.5	16	61
		1-19-66		87.9							24	0		7.2				48	28	114	8.2	4	39
		3-15-66		303							24	0		4.6				32	12	69	7.5	13	55
		4-19-66		57.3							48	0		3.8				50	11	106	8.2	17	63
		6- 6-66		95.7							34	0		3.2				32	4	87	7.1	21	70
		7-13-66		17.9							48	0		4.6				48	9	108	7.2	30	86
		8-24-66		35.5							32	0		3.4				45	19	97	7.1	23	74
		10-12-66		48.5							38	0		4.8				45	14	102	7.2	17	63
		11-29-66		130							32	0		4.6				32	6	84	7.1	8	47
		1- 4-67		371							20	0		4.2				25	9	69	6.7	7	44
		2-16-67		321							22	0		5.2				28	10	69	6.9	9	48
		2-20-67		4,050							10	0		2.2				15	7	43	6.5	10	50
		3-25-67		160							26	0		5.8				30	9	86	6.9	14	58
		3-29-67		127							30	0		4.0				30	5	85	6.9	17	62
		5-11-67		396							19	0		3.4				25	9	66	6.6	20	68
		7-11-67		510							14	0		2.0				19	8	65	6.2	24	76
		8-10-67		194							34	0		2.8				34	6	90	6.9	22	72
		9-12-67		215							22	0		4.0				29	11	77	6.9	22	72

Table 3.--Chemical analyses of water from streams in Blount County--Continued

Number	Stream name ~~or well owner~~	Date of collection	Water-bearing unit	Stream discharge (mgd) ~~or well depth (feet)~~	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
2455000--Continued.	Locust Fork near Cleveland--Continued.	10-13-67		54.9							34	0		5.6				38	10	98	7.4	16	60
		10-24-67		59.5							40	0		5.8				42	9	109	7.7	14	58
2455250	Calvert Prong near Oneonta.	2-20-67		1,490							16	0		2.0				22	9	62	6.2	10	50
		3-28-67		29.4							62	0		2.6				152	101	335	7.2	16	61
		10-24-67		7.1							112	0		3.4				162	70	329	7.4	14	58
2455270	Calvert Prong near Locust Fork.	2-20-67		1,690							36	0		2.4				40	10	92	6.6	11	51
		3-28-67		43.9							66	0		2.8				80	26	175	7.1	17	62
		10-24-67		24.6							96	0		5.2				119	40	257	7.6	14	58
2455280	Little Warrior River near Locust Fork.	2-20-67		1,630							20	0		1.6				30	14	78	6.5	11	52
		3-28-67		63.5							78	0		3.4				78	14	170	7.1	17	62
		10-24-67		22.0							104	0		5.0				111	26	246	7.7	16	60
2455300	Locust Fork of Black Warrior River near Locust Fork.	2-20-67		7,300							12	0		2.8				15	5	47	6.3	8	46
		3-28-67		291							44	0		4.8				48	12	113	7.0	16	60
		10-24-67		79.5							58	0		5.8				61	13	144	7.5	15	59
3573430	Big Spring Creek near Brooksville.	10-24-67		1.6							99	0		2.6				90	9	172	7.6	14	57

Table 3.--Chemical analyses of water from streams in Blount County--Continued

Number	Stream name or well owner	Date of collection	Water-bearing unit	Stream discharge (mgd) or well depth (feet)	Milligrams per liter: Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25° C)	pH	Temperature: °C	Temperature: °F
2450000--Continued.	Mulberry Fork near Garden City--Continued.	9-11-67		776							20	0		4.6				22	6	59	6.9	19	67
		10-16-67		48.5							42	0		6.0				42	8	111	7.6	18	64
		10-18-67		134							42	0		6.8				40	6	121	7.6	17	62
2454500	Locust Fork below Snead.	12-22-65		...							110	0		3.0				98	8	185	7.7	4	40
		4-14-66		...							36	0		3.6				42	12	102	7.7	14	58
		8-29-66		...							80	0		2.6				88	22	174	7.5	22	71
		2-20-67		1,550							12	0		3.0				18	8	47	6.5	10	50
		3-25-67		62.7							36	0		4.6				40	10	99	6.9	14	58
		3-31-67		...							44	0		4.0				48	12	113	7.1	16	60
		5-16-67		...							32	0		4.6				29	3	86	7.3	17	62
		9-18-67		...							44	0		4.0				58	22	113	7.3	18	64
		10-12-67		27.1							64	0		4.8				59	7	133	7.5	17	62
		10-24-67		21.3							56	0		4.8				65	19	145	7.5	13	56
		4- 2-68		91.1							32	0		2.8				38	12	89	7.0	13	56
		5- 1-68		226							22	0		1.6				29	11	71	6.9	16	60
2454850	Whippoorwill Creek near Wynnville.	2-20-67		717							10	0		2.0				12	4	39	6.2	10	50
		3-28-67		8.7							50	0		4.0				60	19	137	7.2	16	60
		10-24-67		2.0							76	0		4.8				129	67	274	7.3	14	58