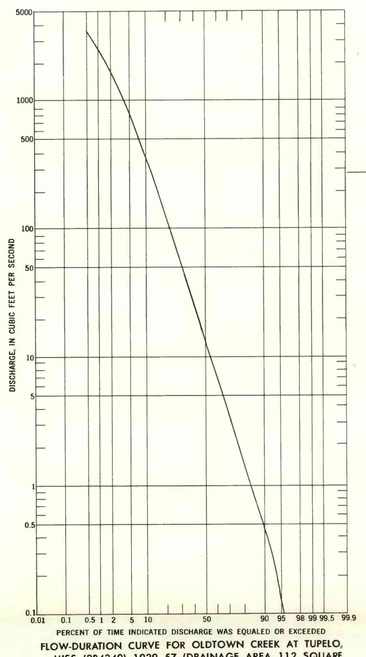
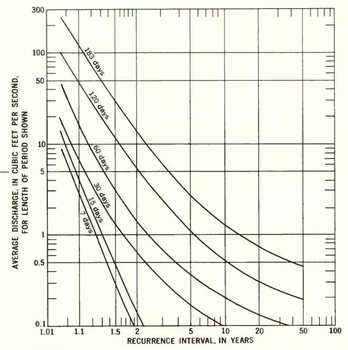
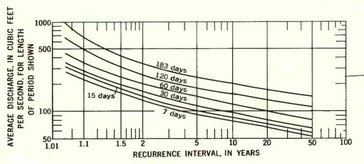


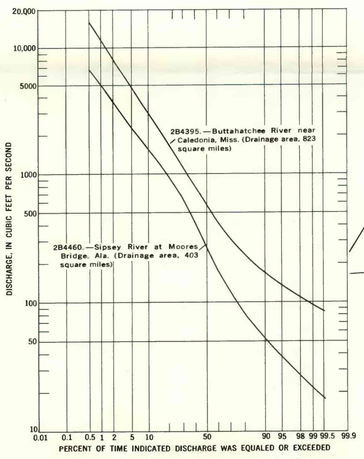
FLOW-DURATION CURVE FOR OLDTOWN CREEK AT TUPELO, MISS. (2B4340), 1929–57 (DRAINAGE AREA, 112 SQUARE MILES)



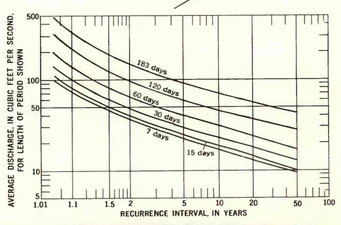
MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW, OLDTOWN CREEK AT TUPELO, MISS. (2B4340), 1929–57



MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW, BUTTAHATCHEE RIVER NEAR CALEDONIA, MISS. (2B4395), 1929–57



FLOW-DURATION CURVES FOR BUTTAHATCHEE RIVER NEAR CALEDONIA, MISS., AND SIPSEY RIVER AT MOORES BRIDGE, ALA., 1929–57



MAGNITUDE AND FREQUENCY OF ANNUAL LOW FLOW, SIPSEY RIVER AT MOORES BRIDGE, ALA. (2B4460), 1929–57

Maximum, minimum, and median concentrations of selected constituents in ground water in the Tombigbee River basin

[Data in parts per million, except specific conductance, pH, color, and temperature]

Constituent	Tuscaloosa Group undifferentiated [1]			Coker Formation			Gordo Formation			McShan Formation			Eutaw Formation			Coffee Sand [2]			Ripley Formation [3]			Lower Wilcox aquifer		
	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
Silica (SiO_2)	7.2	1.3	5.3	5.3	3.6	4.5	27	1.9	7.9	23	0.8	7.1	35	1.1	12	45	17	24	18	8.4	12	28	4.7	13
Iron (Fe)	4.9	.00	.09	15	.37	1.5	20	.00	.84	9.9	.00	.20	5.8	.00	.62	5.1	.06	----	1.6	.2	1.1	15	.99	5.2
Calcium (Ca)	129	1.2	----	35	1.7	4.4	62	1.5	7.9	66	.4	11	186	1.0	9.4	52	11	15	74	22	53	31	1.2	7.0
Magnesium (Mg)	36	.0	----	12	1.0	2.2	5.1	.0	2.8	7.9	.0	2.8	55	.2	3.0	12	3.8	5.3	18	4.1	9.6	8.4	.3	1.3
Sodium (Na)	680	1.2	----	84	1.5	3.1	321	.9	20	1,020	1.5	76	3,340	2.8	201	101	12	58	134	8.3	17	11	1.5	8.6
Carbonate plus bicarbonate (CO_3+HCO_3)	165	0	26	150	8	26	366	20	83	651	18	168	652	6	328	261	108	222	326	145	217	164	6	32
Sulfate (SO_4)	10	.0	3.0	12	.2	1.8	16	.0	2.8	34	.0	3.6	95	.0	3.5	39	13	30	132	9.2	22	11	.8	5.8
Chloride (Cl)	1,350	1.0	3.5	25	1.2	2.8	370	1.9	5.2	1,320	2.0	70	5,640	1.0	120	13	1.2	6.7	12	2.0	6.0	12	1.8	3.0
Fluoride (F)	.4	.0	.1	.6	.0	.1	2.0	.0	.3	5.0	.0	.4	6.5	.1	1.4	----	----	----	.9	.0	.6	.2	.0	.2
Nitrate (NO_3)	2.8	.2	1.9	28	.0	.7	5.1	.0	.3	7.6	.0	.6	30	.0	.7	1.2	.0	1.0	4.4	.0	1.8	1.3	.0	.2
Dissolved solids	2,450	17	----	140	28	81	865	28	96	2,680	37	264	9,630	52	621	324	166	256	483	174	241	158	13	71
Hardness as $CaCO_3$	420	4	20	134	10	28	173	5	28	185	1	38	691	3	33	179	43	59	246	94	148	112	4	20
Specific conductance (micromhos at 25°C)	4,180	19	----	247	27	64	1,610	54	170	4,880	54	504	18,500	46	1,090	----	----	----	711	397	541	254	19	88
pH	8.0	5.7	----	8.1	5.5	6.5	8.5	5.7	7.5	8.8	6.1	8.0	8.9	5.0	8.1	----	----	----	8.4	7.2	7.8	7.5	6.0	6.3
Color	30	2	----	10	5	7	40	2	8	22	0	5	12	0	5	----	----	----	20	0	5	10	5	7
Temperature (°F)	74	60	64	80	64	66	84	63	68	85	64	72	84	61	67	----	----	----	----	----	----	----	----	----

[1] Formations in this group not differentiated in northern part of basin.
[2] Aquifer in northern part of basin. It is a sandy facies in the lower part of the Selma Group.
[3] Contains water-bearing sands in northern part of basin. Ripley Formation is in upper part of Selma Group.

Water use, 1965

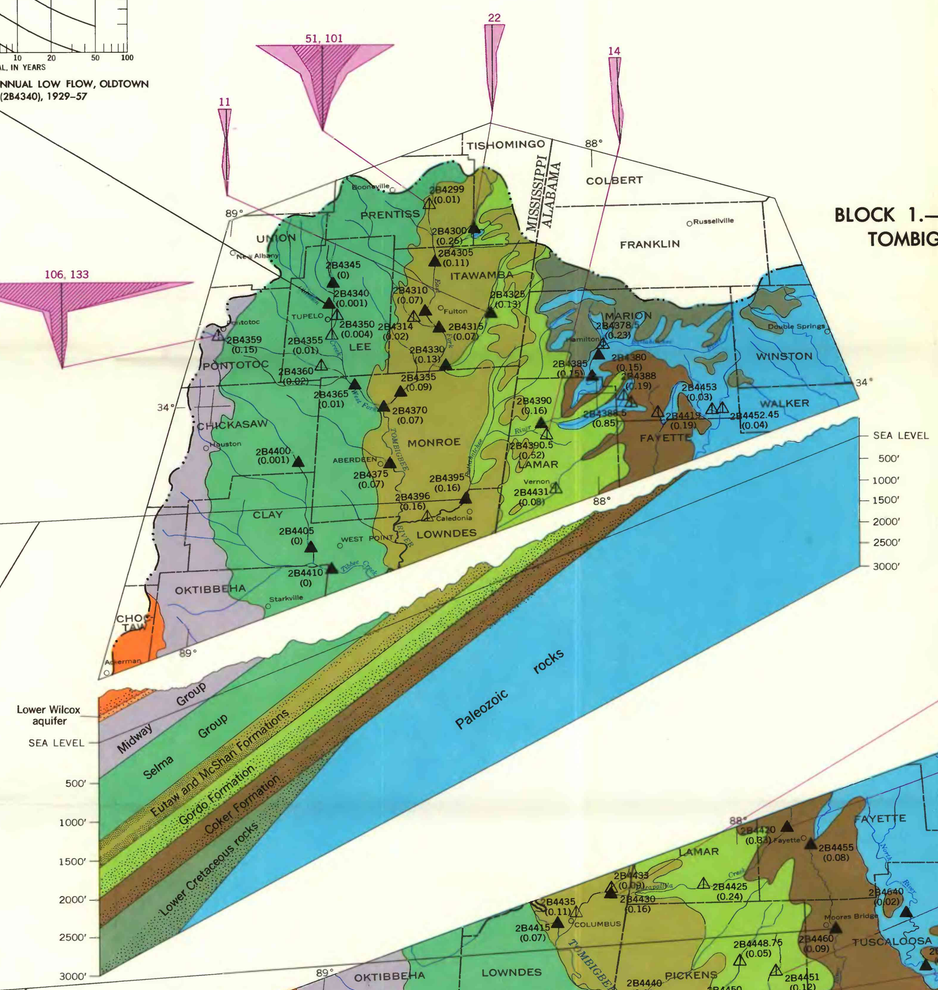
[Results in millions of gallons per day]

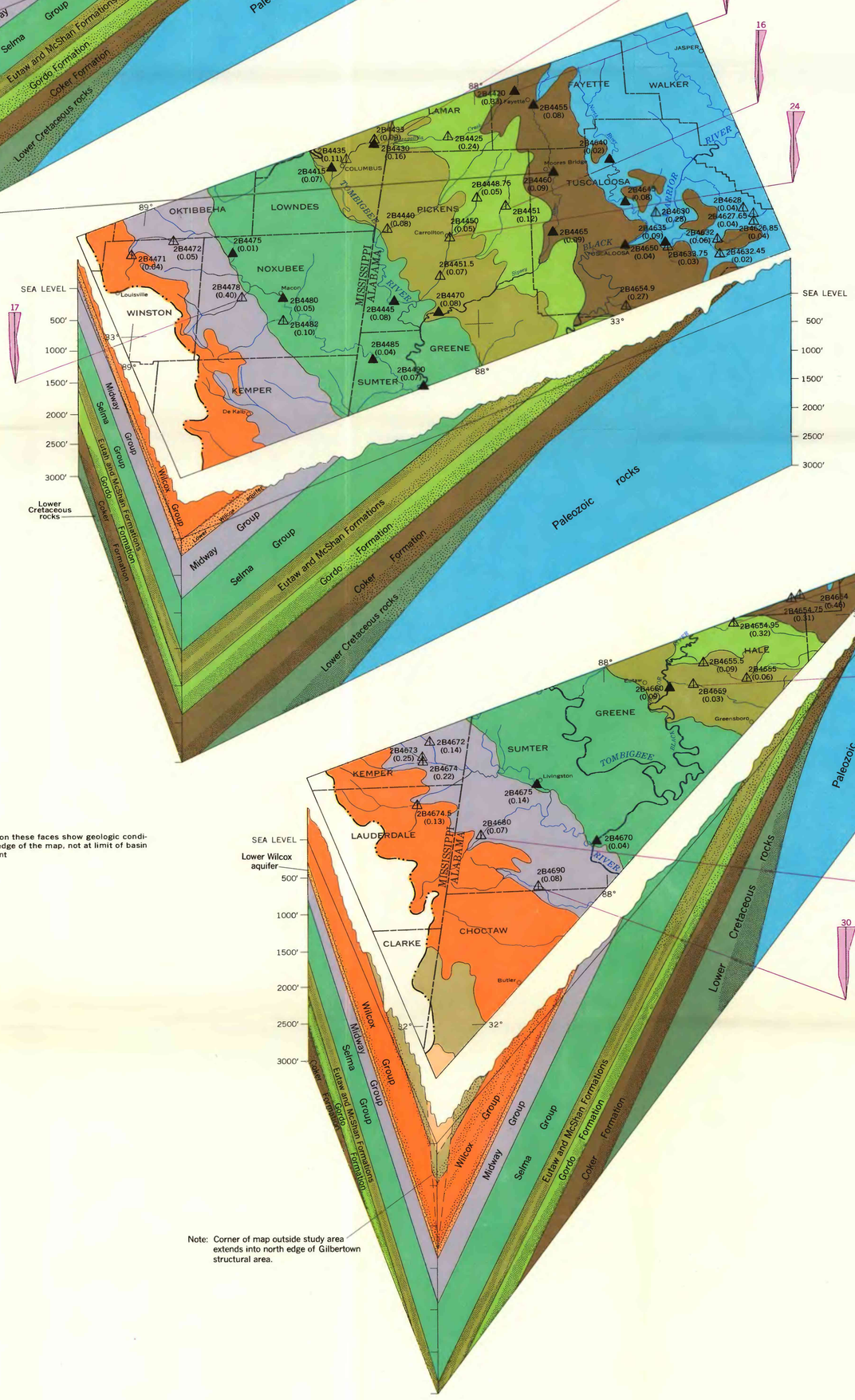
Source	Public supplies	Industrial supplies	Irrigation	Other	Total
Surface water	1.5	16.0	0	0.5	18.0
Paleozoic rocks	.7	0	0	.8	1.5
Coker Formation	.8	6.0	0	1.8	8.6
Gordo Formation	8.4	13.7	.1	1.7	23.9
Eutaw and McShan Formations	11.5	5.4	0	7.0	23.9
Lower Wilcox aquifer	2.0	.1	0	.3	2.4
Total	24.9	41.2	.1	12.1	78.3

Hydraulic characteristics of aquifers in the Tombigbee River basin

[Averaged by aquifer; number in parentheses denotes number of tests used to compute average. gpd=gallons per day; gpm=gallons per minute]

Aquifer	Coefficient				Specific capacity (gpm per ft of drawdown)
	Transmissibility (gpd per ft)	Storage	Permeability (gpd per sq ft)		
Coker Formation	(6) 60,000	(2) 0.0003	(4) 810		(9) 14
Gordo Formation	(4) 88,000	(1) .0001	----		(2) 28
Eutaw and McShan Formations	(7) 8,100	(3) .0006	----		(7) 2.5
Lower Wilcox aquifer	(2) 138,000	(2) .0002	(2) 1,600		(2) 40





Note: Geology on these faces show geologic conditions at the edge of the map, not at limit of basin or embayment

Note: Corner of map outside study area extends into north edge of Gilbertown structural area.

EXPLANATION

Eocene — Claiborne Group
- Zilpha Clay, Winona Sand, and Tallahatta Formation
- Meridian-upper Wilcox aquifer
- Wilcox Group
  Lighter tone is lower Wilcox aquifer

Paleocene
- Midway Group

(TERTIARY)

Upper Cretaceous
- Selma Group
- Eutaw and McShan Formations
- Tuscaloosa Group undifferentiated

Tuscaloosa Group
- Gordo Formation
- Coker Formation

Lower Cretaceous
- Lower Cretaceous rocks

(CRETACEOUS)

- Paleozoic rocks

(PALEOZOIC)

WATER-BEARING ZONES

- Fresh water (contains less than 1,000 parts per million dissolved solids)
- Saline water (contains more than 1,000 parts per million dissolved solids)

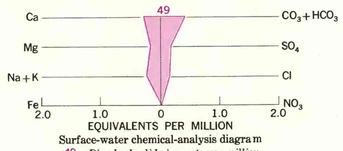
Contact

Basin boundary

2B4675 (0.14) — Daily-record station

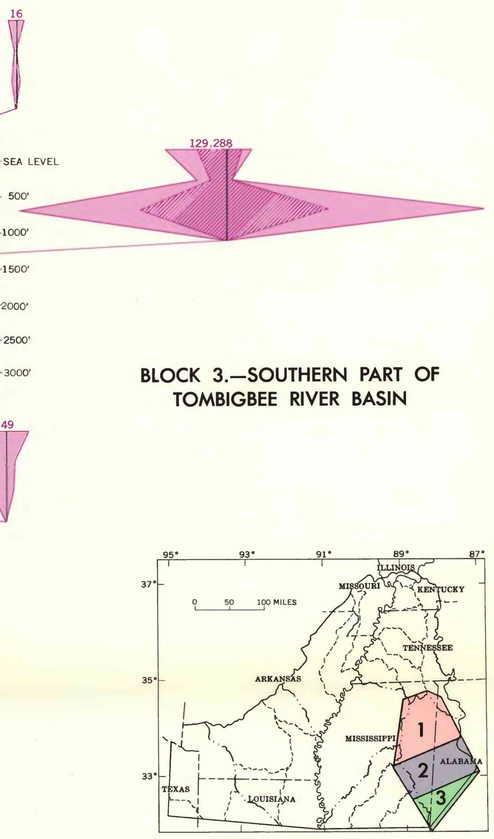
2B4680 (0.07) — Partial-record or short-term daily-record station

Upper number is station identification; number in parentheses is 7-day 2-year low flow, in cubic feet per second per square mile, adjusted to 1929–57. For a few of the stations that became subject to withdrawals for irrigation during the study period, low-flow data are shown for natural conditions



Surface-water chemical-analysis diagram

49 — *Dissolved solids in parts per million*



AREA COVERED BY BLOCK DIAGRAMS

Note: The block diagrams are schematic, and depths and distances are not exact. For more detailed information about the aquifers and low flow of streams in this basin, refer to Prof. Papers 448-B, C, D, and I (Cushing and others, 1964; Boswell and others, 1968; Hosman and others, 1968; and Speer and others, 1964). Additional water information for this basin is contained in the following publications:

Alabama

Newton, Sutcliffe, and LaMoreaux (1961)
Paulson, Miller, and Drennen (1962)
Peirce (1957, 1959, 1962, 1967)
Peirce and Guerin (1959)
Toulmin, LaMoreaux, and Lanphere (1951)
Wahl (1965, 1966)

Mississippi

Boswell (1963)
Golden (1962)
Lang and Boswell (1960)
Robinson and Skelton (1960)
Wasson, Golden, and Gaydos (1965)

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1970—W68264

BLOCK DIAGRAMS, GRAPHS, AND CHEMICAL-ANALYSES DIAGRAMS SHOWING AVAILABILITY AND QUALITY OF WATER IN THE SOUTHEASTERN PART OF THE MISSISSIPPI EMBAYMENT