

Ground water is the source of drinking water for 51 percent of the 4.88 million residents of Tennessee (U.S. Department of Commerce, 1992; Solley and others, 1993). In 1990, public-supply withdrawal of ground water from wells and springs in eight of the principal aquifers in Tennessee (fig. 1) averaged 269 million gallons per day (Mgal/d) and accounted for 38 percent of the total public-supply withdrawals (712 Mgal/d) (revised from Solley and others, 1993) (fig. 2). This rate represents an increase of about 68 percent in the use of ground water for public supply since 1970 when public-supply withdrawals averaged about 160 Mgal/d (Murray and Reeves, 1972) (fig. 3), and an increase of about 34 percent since 1980 when withdrawals averaged about 200 Mgal/d (Solley and others, 1983).

Most of the ground water used for public supply in 1990 was withdrawn from the Tertiary sand and Cretaceous sand aquifers in western Tennessee (fig. 1). Ground-water withdrawals from these aquifers averaged 212 Mgal/d and accounted for 79 percent of the ground water used for public supply in the State. The county with the largest rate of withdrawal for public supply in 1990 was Shelby County, which includes the city of Memphis. Withdrawals in Shelby County were 154 Mgal/d, or 57 percent of ground water used for public supply in the State (fig. 4).

The principal public-supply systems (withdrawals equal to or greater than 0.03 Mgal/d) that withdraw ground water in Tennessee are shown in figure 5 and are listed alphabetically by county in table 1. The data in table 1 include surface-water withdrawals or purchases when the system used other sources as well as ground water. The principal aquifer supplying each system also is identified in table 1. Thirty-four of the 204 principal public-supply systems listed in table 1 (multiple public-supply systems at Federal Information Processing System (FIPS) codes 33D, 45A, 53D, 69C, 89B, 91A, 145B, 157A, 157B, 157F, and 167D on figure 5) withdrew 1 Mgal/d or more and accounted for 83 percent of ground water withdrawn for public supply in 1990 (table 2).

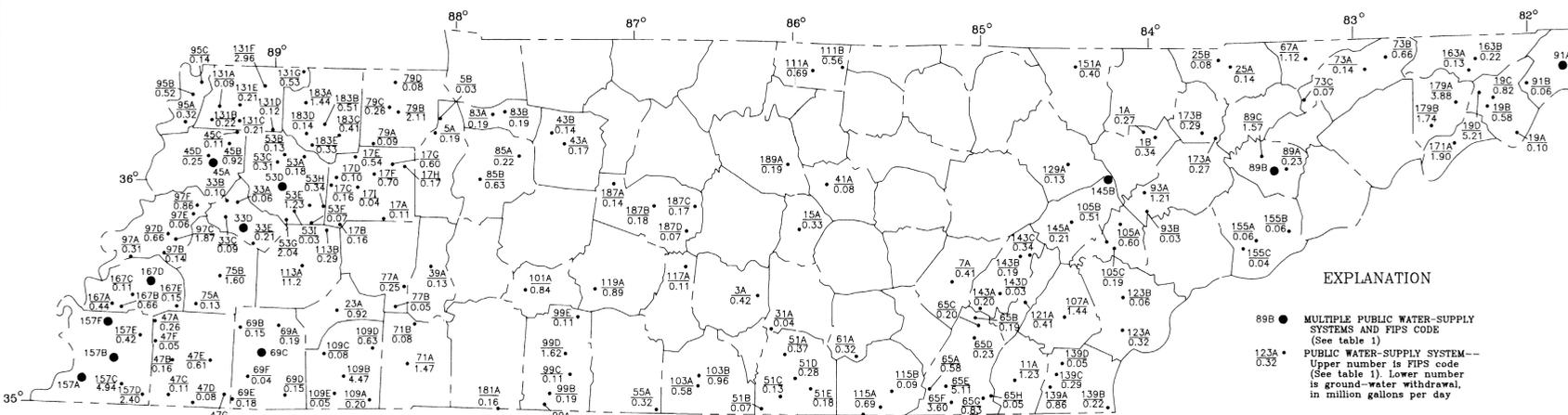


Figure 5. Location of the principal public-supply systems in Tennessee that withdrew ground water in 1990.

Table 1. Principal public-supply systems withdrawing ground water in Tennessee in 1990

FIPS, Federal Information Processing System; PWSID, Public Water Supply Identification number; Mgal/d, million gallons per day; UB, Utility Board; UD, Utility District; FC, Utility Commission; sub., subsidiary; WS, Water System; FUD, First Utility District; RFD, Board of Public Utilities; WC, Water Corporation; WD, Water Department; MLGW, Memphis Light, Gas and Water Division; Aquifer designations are: ALVM, Alluvial; CRCS, Cretaceous sand; MSSP, Mississippian carbonate; ODVC, Ordovician carbonate; PCMB, Crystalline rock; PSLV, Pennsylvanian sandstone; TRTR, Tertiary sand

FIPS code and site ID	County	PWSID	Public supply	Source	Aquifer	Ground water (Mgal/d)	Surface water (Mgal/d)	Purchased water (Mgal/d)
1A	Anderson	514	North Anderson County Utility District	Shelterly Spring, Chick River, Anderson Co. UB	CMBR	0.27	0.61	0.29
1R	Anderson	513	Norris Water Commission	Clear Creek Spring	CMBR	.34	..	..
3A	Bedford	730	Norris Water Commission	Clear Creek Spring	CMBR	.42	..	..
5A	Benton	51	Big Sandy Water Department	well	CRCS	.19	..	..
5B	Benton	55	Riverside Lake Heights WS	well	CRCS	.03	..	..
7A	Bloch	551	Tillicum Water System	4 wells	CMBR	.41	..	..
11A	Bradley	117	Cleveland Utilities	Waterline Spring, Howeover River, Howeover LC	CMBR	1.23	5.22	1.79
15A	Canon	756	Woodbury Water System	spring	ODVC	.33	..	..
17A	Carroll	115	Madison County Utility District	2 wells	CRCS	.11	..	..
17B	Carroll	98	Cedar Grove Utility District	2 wells	TRTR	.16	..	..
17C	Carroll	35	Atwood Water System	well	TRTR	.16	..	..
17D	Carroll	710	Trezevant Water System	2 wells	TRTR	.10	..	..
17E	Carroll	316	Huntington WS	2 wells	TRTR	.54	..	..
17F	Carroll	421	Hampton Water Department	2 wells	TRTR	.03	..	..
17G	Carroll	81	Buccion Water System	well	CRCS	.60	..	..
17H	Carroll	310	Hollow Rock WD	3 wells	CRCS	.17	..	..
17I	Carroll	422	McIntosh Water System	2 wells	TRTR	.04	..	..
19A	Carter	584	Roan Mountain UD	spring	PCMB	.10	..	..
19B	Carter	28	Hampton Utility District	spring	PCMB	.82	..	..
19C	Carter	94	First UD of Carter Co.	Campbell Spring	CMBR	.82	..	..
19D	Carter	221	Elizabethon Water Department	Hampton Springs, Valley Forge Spring, Big Springs	CMBR	5.21	..	..
23A	Chester	293	Henderson Water Department	well	CRCS	.92	..	..
25A	Clatsone	290	Lincoln Memorial University	Capron Spring	UD	.14	..	..
25B	Clatsone	820	Lincoln Memorial University	Clear Lake Utility District	UD	.08	..	..
31A	Coffee	230	Arnold Village	2 wells	MSSP	.04	..	..
33A	Crockett	148	Crockett Mills Utility District	2 wells	TRTR	.06	..	..
33B	Crockett	248	Friendship Water Company	2 wells	TRTR	.10	..	..
33C	Crockett	441	Many City Water Department	2 wells	TRTR	.09	..	..
33D	Crockett	5	Alamo Water Department	3 wells	TRTR	.31	..	..
33E	Crockett	6	Crocker Water Utility District	2 wells	TRTR	1.06	..	..
33F	Crockett	45	Bells Public Utility District	well	TRTR	.21	..	..
36A	Decatur	186	Decatur Water System	well	ODVC	.13	..	..
41A	Dickson	401	Dowdell Lake Utility District	2 wells	TRTR	.08	..	..
43A	Dickson	285	Harpeth Utility District	Baker Spring, Harpeth UD, Sylvia Tennessee City Food UD, Spring	MSSP	.17	..	.07
43B	Dickson	724	Vander Water System	spring	MSSP	.14	..	..
45A	Dyer	212	Dyersburg Sub. Con. UD	3 wells	TRTR	.38	..	..
45B	Dyer	209	Dyersburg Water Department	3 wells	TRTR	4.24	..	..
45C	Dyer	496	Nashown Water Department	3 wells	TRTR	.92	..	..
45C	Dyer	711	Tramble Water System	2 wells	TRTR	.11	..	..
45D	Dyer	518	Norwood Dyersburg UD	3 wells	TRTR	.25	..	..
47A	Fayette	254	Gallop Water Department	3 wells	TRTR	.26	..	..
47B	Fayette	521	Oakland Water Department	2 wells	TRTR	.16	..	..
47C	Fayette	597	Russville Water System	2 wells	TRTR	.11	..	..
47D	Fayette	477	Moscow Water Department	well	TRTR	.08	..	..
47E	Fayette	641	Somerville Water System	5 wells	TRTR	.61	..	..
47F	Fayette	21	Pine Lake Cooperative, Inc.	2 wells	TRTR	.05	..	..
47G	Fayette	382	Leflore Water System	3 wells	TRTR	.04	..	..
51A	Franklin	232	East Spring Water Department	2 wells	MSSP	.37	..	..
51B	Franklin	317	Hartland Water System	3 wells	MSSP	.07	..	..
51C	Franklin	46	Bedevore Rural Utility District	well	MSSP	.13	..	..
51D	Franklin	187	Dechord Water Department	2 wells	MSSP	.28	..	..
51E	Franklin	146	Common Board of Public Utilities	spring	MSSP	.18	..	..
53A	Gibson	67	Brufford Water System	well	TRTR	.18	..	..
53B	Gibson	599	Radford Water System	2 wells	TRTR	.13	..	..
53C	Gibson	209	Dyer Water System	3 wells	TRTR	.31	..	..
53D	Gibson	709	Gibson County Mem. WD #1	Gier's Chapel well	TRTR	.16	..	..
53D	Gibson	788	Gibson County Mem. WD #2	Concord well	TRTR	.10	..	..
53D	Gibson	812	Gibson County Mem. WD #3	Gibson Central well	TRTR	.16	..	..
53D	Gibson	813	Gibson County Mem. WD #4	Fruitland well	TRTR	.16	..	..
53D	Gibson	815	Gibson County Mem. WD #5	Goat City well	TRTR	.16	..	..
53D	Gibson	816	Gibson County Mem. WD #6	Hidwell well	TRTR	.03	..	..
53D	Gibson	741	Gibson County Mem. WD #7	Yorkville well	TRTR	.10	..	..
53D	Gibson	707	Trenton Water System	3 wells	TRTR	.60	..	..
53E	Gibson	458	Milan Water Department	3 wells	TRTR	1.23	..	..
53F	Gibson	445	Medina Water Department	2 wells	TRTR	.07	..	..
53G	Gibson	314	Hambuda Water Department	4 wells	TRTR	2.04	..	..
53H	Gibson	796	Milan Area #1	TRTR	.34	..	..	
53I	Gibson	263	Gibson Water Department	2 wells	TRTR	.03	..	..
55A	Giles	183	Adrian Water System	2 wells	TRTR	.32	..	..
61A	Grundy	706	Tracy City Water System	well field and springs	PSLV	.32	..	..
65A	Hamilton	635	Walton Ridge Utility District	well	CMBR	.58	..	..
65B	Hamilton	37	Union Fork-Hickwell UD	3 wells	TRTR	.19	..	..
65C	Hamilton	605	Sale Creek Utility District	2 wells	TRTR	.15	..	..
65D	Hamilton	169	Soddy-Daisy Filling Water	well, Soddy Creek embayment, rock quarry	CMBR	.23	..	..
65E	Hamilton	303	Hesson Utility District	Creek embayment, rock quarry	CMBR	5.11	..	..
65F	Hamilton	219	Eastside Utility District	well, Tennessee American Water Co.	CMBR	3.60	..	0.0
65G	Hamilton	613	Savannah Valley UD	well	CMBR	.83	..	..
65H	Hamilton	996	Grandison Estate Water System	well	CMBR	.05	..	..
67A	Hancock	640	Full Branch Spring, Bear Creek Rch.	Full Branch Spring, Bear Creek Rch.	CMBR	1.12	..	..
69A	Hartman	704	Toone Water System	3 wells	CRCS	.19	..	..

Figure 4. Range in ground-water withdrawal rates, in million gallons per day, by county in Tennessee in 1990.

Table 1. Principal public-supply systems withdrawing ground water in Tennessee in 1990--Continued

FIPS code and site ID	County	PWSID	Public supply	Source	Aquifer	Ground water (Mgal/d)	Surface water (Mgal/d)	Purchased water (Mgal/d)
69B	Hartman	748	Whiteville Water Department	3 wells	TRTR	0.15	..	..
69C	Hartman	63	Bolivar Water Plant	well	CRCS	1.25	..	..
69D	Hartman	64	Western State Hospital	2 wells	TRTR	.15	..	..
69E	Hartman	455	Middleton Water Department	well	CRCS	.15	..	..
69F	Hartman	267	Grand Junction WD	2 wells	TRTR	.18	..	..
69F	Hartman	874	Hickory Valley Water System	2 wells	TRTR	.04	..	..
71A	Hardin	611	Savannah Public Utilities Dept.	2 wells	ALVM	1.47	..	..
71A	Hardin	686	Sahlin Utility District	well	CRCS	.08	..	..
72A	Hawkins	682	Sargentville Utility District	spring	CMBR	.14	..	..
73B	Hawkins	855	First UD of Hawkins County #2	Lee Spring, Hamilton Spring	CMBR	.66	..	..
73C	Hawkins	472	Mooreburg Utility District	spring	CMBR	.07	..	..
73A	Haywood	672	Stanton Water System	2 wells	TRTR	.13	..	..
73B	Haywood	753	Brownsville Water Department	well	TRTR	1.60	..	..
77A	Henderson	614	Scotts Hill Water System	3 wells	CRCS	.25	..	..
77B	Henderson	609	Sartin Water System	2 wells	CRCS	.05	..	..
78A	Henry	296	Henry Water System	2 wells	TRTR	.09	..	..
79D	Henry	536	Paris Board of Public Utilities	4 wells	CRCS	2.11	..	..
79E	Henry	540	Henry County Water Company	2 wells	TRTR	.25	..	..
79D	Henry	568	Puryear Water System	2 wells	TRTR	.08	..	..
83A	Houston	698	Tennessee Ridge Water System	2 wells	MSSP	.19	..	..
83B	Houston	839	East Water Treatment Plant #2	well	MSSP	.19	..	..
85A	Humphreys	420	McEwen Water Department	2 wells	MSSP	.22	..	..
85B	Humphreys	733	Waverly Water Plant	well	MSSP	.63	0.31	..
89A	Jefferson	746	White Pine Water System	2 wells, South Morrisons Wtr UD, spring and wells	CMBR	.23	..	0.0
89B	Jefferson	170	Dandridge Water Department	well	CMBR	.58	..	..
89B	Jefferson	385	Mountain View Water System	well, Dandridge WD	CMBR	.03	..	0.0
89C	Jefferson	328	Jefferson City Water and Sewer Commission	well, Mosley Creek Spring	CMBR	1.57	..	..
91A	Johnson	489	Johnson County Utility District	Lezo Spring	CMBR	.08	..	..
91A	Johnson	475	Mountain City Water Department	Lezo Spring, Silverlake Spring, (surface water), 2 wells, unnamed tributary	CMBR	1.10	..	..
91B	Johnson	85	Carderwell Utility District	2 wells	PCMB	.06	0.04	..
93A	Knox	280	Hallsdale-Powell UD	Fowler Springs, Gray High Spring, Beaver Creek	CMBR	1.21	2.99	..
93B	Knox	762	Little Creek Sanitarium	well	CMBR	.03	..	0.0
95A	Lake	579	Ridgely Water System	2 wells	TRTR	.32	..	..
95B	Lake	700	Tiptonville Water System	3 wells	TRTR	.52	..	..
95C	Lake	874	Redford Utility District	2 wells	TRTR	.14	..	..
97A	Lauderdale	245	Fort Pillow State Farm	3 wells	TRTR	.31	..	..
97B	Lauderdale	295	Hennings Water Department	well	TRTR	.14	..	..
97C	Lauderdale	255	Ridley Water System	4 wells	TRTR	.87	..	..
97D	Lauderdale	251	Lauderdale County Water System	4 wells	TRTR	.66	..	..
97E	Lauderdale	255	Gates Water Department	2 wells	TRTR	.06	..	..
97F	Lauderdale	279	Halls Water System	3 wells	TRTR	.86	..	..
99A	Lawrence	604	St. Joseph Water System	spring	MSSP	.09	..	..
99B	Lawrence	408	Lorens Water Department	well	MSSP	.19	..	..
99C	Lawrence	399	Leona Utility District	City spring	MSSP	.11	..	..
99D	Lawrence	676	Lawrenceburg Water System	well	MSSP	1.62	1.86	..
99E	Lawrence	676	Summertown Water System	2 wells	MSSP	.11	..	..
101A	Lewis	304	Hohenwald Water System	2 wells	MSSP	.84	..	..
103A	Lincoln	242	Fayetteville Water System	spring, Teal Hollow Spring, Elk River	MSSP	.58	2.58	..
103B	Lincoln	764	Lincoln County Board of Public Utilities #1	well	MSSP	.96	..	.09
103B	Lincoln	764	Lincoln County Board of Public Utilities #2	Fayette				