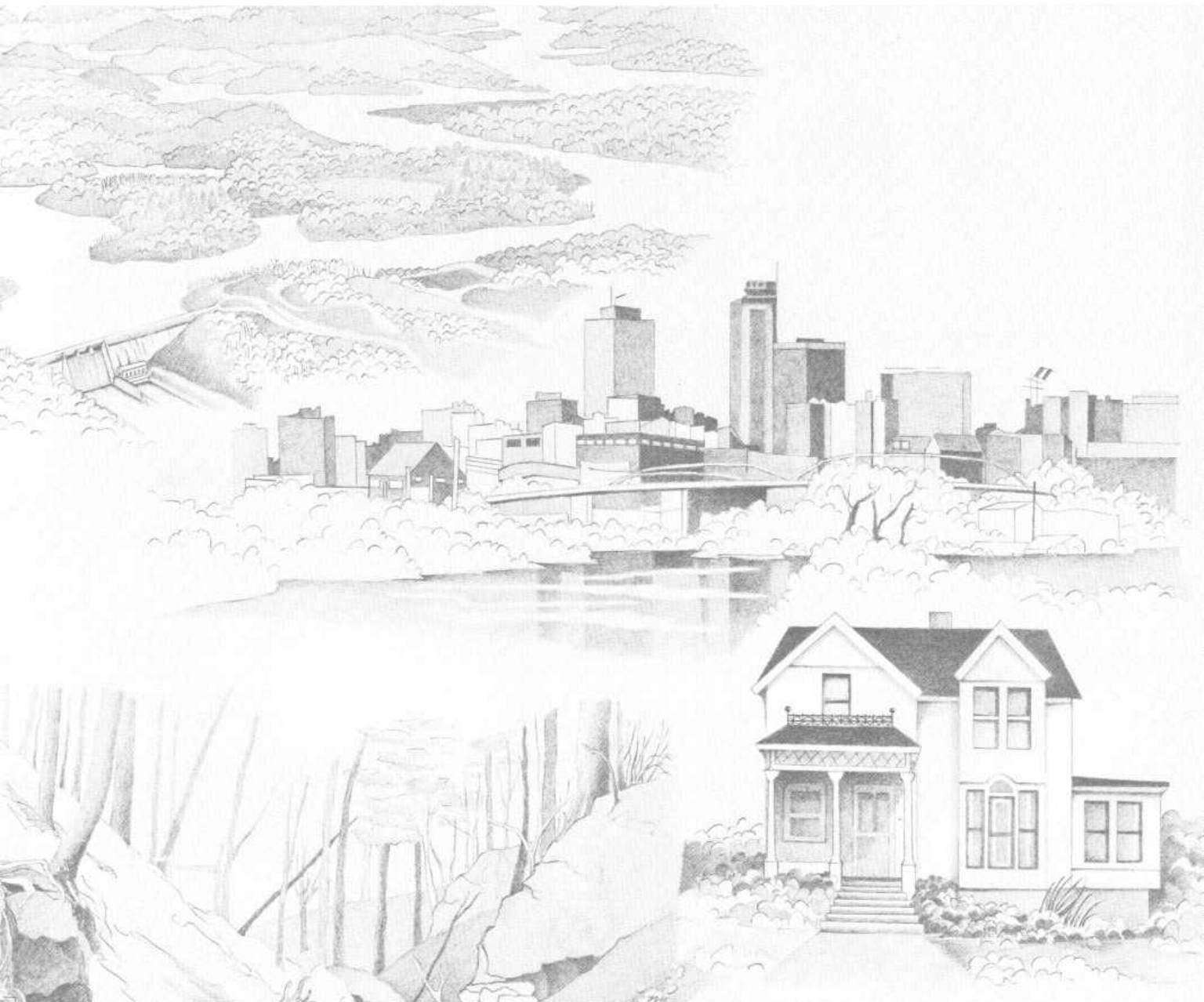
WATER-RESOURCES INVESTIGATIONS REPORT 84-4074

DROUGHT-RELATED IMPACTS ON MUNICIPAL AND MAJOR SELF- SUPPLIED INDUSTRIAL WATER WITHDRAWALS IN TENNESSEE--PART B



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in cooperation with
TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT, Division of Water Management
TENNESSEE VALLEY AUTHORITY, Office of Natural Resources and Economic Development, Division of Air and Water Resources, Regional

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Table 20.--Self-supplied commercial and industrial water users, Obion-Forked Deer River basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Carroll							
*Norandal USA, Inc. (3353); Huntingdon	39A	200	Wells (2) Huntingdon WD		1.017 .004	-	Category 7. Product - Aluminum sheet foil. Storage capacity equals 300,000 gallons (200,000 gallons for fire protection).
Crockett							
*Winter Garden, Inc. (2037); Bells	40C	800	Wells (7)		4.400	0.121	Category 7. Product - Frozen vegetables. Storage equals 1,500 gallons.
Dyer							
*Dyersburg Fabrics, Inc. (2254, 2257, 2259); Dyersburg	40D	1,200	Wells (2) Dyersburg WD		.976 .376	.024	Category 7. Product - Pile fabrics, infant fabrics, and glove cloth. Storage capacity equals 550,000 gallons.
Gibson							
*Beare Company (4222); Humboldt	40B	7	Wells (2)		.200	-	Category 7. Service - Refrigerated warehouse.
*Martin Marietta Sales, Inc. (3483); Milan	40B	1,400	Wells (9)		.990	.007	Category 7. Service - Load, assemble, and pack ammunition. High concentration of nitrates prevents use of one well. Trace amounts of RDX and TNT have been detected in two wells. Storage capacity equals 280,000 gallons.
Madison							
*Consolidated Aluminum Corporation (3353); Jackson	40A	478	Wells (5) Jackson Utility Division		3.980 .160	-	Category 7. Product - Aluminum sheets, plates, and foil. Corrosive water due to water softness, low pH, and low alkalinity.
*Owens-Corning Fiberglass Company (2296, 3229); Jackson	40A	900	Wells (2)		.720	.003	Category 7. Product - Industrial reinforcing fiberglass. Storage capacity equals 500,000 gallons.

Table 20.--Self-supplied commercial and industrial water users, Obion-Forked Deer River Basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Obion							
*Goodyear Tire and Rubber Company (3011); Union City	39C	2,492	Wells (5) Union City WD	Aquifer supply is adequate to meet demand. Recharge rate is about 0.6 (Mgal/d)/mi^2.	4.752 .059	0.065	Category 7. Product - Radial passenger tires. A high content of iron is present in well water.
*Kinkead Industries Inc. (3231); Union City	39C	400	Wells (1) Union City WD		.175 .001	.002	Category 7. Product-Shower doors.
*Reelfoot Packing Company (2011, 2013); Union City	39C	680	Wells (2)		1.500	.074	Category 7. Product - Meat products.

Table 21.--Public water-supply facilities, Lower Tennessee River basin

[*System received all water from primary surface-water or ground-water source; ** purchases part or all water from a primary (*) source; *** purchases part or all water from a secondary (**) source; **** purchases part or all water from a tertiary (***) source]

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Bledsoe									
*Pikeville WS	24	3,000	943	Wells (3)	0.460	0.516	0.231	77.0	Category 7. Occasional turbidity problems. Storage capacity equals 1,550,000 gallons.
Bradley									
*Hiwassee Utilities Commission	22C	-	-	Hiwassee River (about 22.5)	388.000	7.500	3.000	-	Category 1. The controlling reservoirs for this reach of the Hiwassee River are Apalachia Dam located at river mile 66.0 on the Hiwassee River and Ocoee Dam No. 1 located at river mile 11.9 on the Ocoee River. Hiwassee Utilities Commission sells water to the Athens and Cleveland Utilities Boards. All water sold to the Athens Utilities Board is passed through Athens' system to the city of Niota. Storage capacity equals 2,000,000 gallons.
**Cleveland Utilities Board	22C	46,991	14,512	Hiwassee River (about 22.0) Spring (1) Hiwassee Utilities Commission	388.000 2.520 -	7.000	5.100 1.400 2.000	165.1	Categories 1 and 7. The controlling reservoirs for this reach of the Hiwassee River are Apalachia Dam located at river mile 66.0 on the Hiwassee River and Ocoee Dam No. 1 located at river mile 11.9 on the Ocoee River. Storage capacity equals 7,000,000 gallons.

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Bradley--Continued									
***North Bradley UD	22C	620	177	Cleveland Utilities Board	-	N/A	.197	138.7	Categories 1 and 7.
****Charleston - Calhoun UD	22C	1,500	508	North Bradley UD	-	N/A	0.111	74.0	Categories 1 and 7. Storage capacity equals 200,000 gallons.
***Prospect - McDonald UD	22C	8,100	2,025	Cleveland Utilities Board	-	N/A	.539	66.5	Categories 1 and 7.
***Ocoee UD	22B	3,117	1,325	Wildwood Spring (1)	1.440	1.000	.421	136.7	Categories 1 and 7. Ocoee UD serves the city of Ocoee in Polk County. Turbidity problems after heavy rainfall. Storage capacity equals 500,000 gallons.
				Cleveland Utilities Board	-		.005		
**Niota WS	22C	1,826	564	Hiwassee Utilities Commission	-	N/A	155	84.9	Category 1. Niota WS serves the city of Niota in McMinn County. Storage capacity equals 300,000 gallons.
Grundy									
*Big Creek UD	24	6,500	1,600	Ranger Creek (about 500 feet upstream from Highway 56)	See additional information	1.00	.500	66.5	Source capacity data for Ranger Creek is not available due to the lack of adequate data. Storage capacity equals 1,050,000 gallons plus a lake containing about 75 acre-feet or 25,000,000 gallons.

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Grundy--Continued									
**Griffith Creek UD	24	700	300	Big Creek UD	-	N/A	.068	97.1	Griffith Creek UD serves an area near the city of Whitwell in Marion County. Inadequate storage for water. Storage capacity equals 100,000 gallons.
Hamilton									
*Daisy - Soddy Falling Water UD	23A	8,500	2,790	Soddy Creek, Chickamauga Reservoir (4.0)	See additional information	2.000	0.536	85.4	Categories 5 and 7. Total storage in Chickamauga Reservoir equals 392,000 acre-feet at normal minimum pool elevation of 675 feet above sea level. This provides adequate water to meet the UD's water demands for more than 90 days. Hixon UD provides water to Daisy - Soddy's UD in emergency situations only. Storage capacity equals 1,560,000 gallons.
				Wells (2)	0.698		.190		
				Hixon UD	-		-		
*Mowbray Mountain UD	23A	1,050	350	Mont Lake	See additional information	.173	.120	114.3	While Mont Lake has an estimated storage capacity of about 200 acre-feet or 65,000,000 gallons of water, the availability of this supply is not dependable. During the summer of 1981, Mont Lake went dry. Consequently, Mowbray Mountain UD has applied for and received authorization and funding to develop the

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Hamilton--Continued									
									necessary facilities to purchase its water from Daisy - Soddy Falling Water UD. Storage capacity equals 250,000 gallons.
*Sale Creek UD	23A	1,700	325	Wells (3)	.090	.403	.086	50.0	Category 7. Storage capacity equals 400,000 gallons.
**Union Fork - Bakewell UD	23A	1,710	470	Wells (3) Sale Creek UD	0.215 -	0.215	0.175 .001	102.9	Category 7. Occasional water losses due to breaks in deteriorating water mains and distribution lines. Storage capacity equals 175,000 gallons.
*Savannah Valley UD	23B	5,616	1,460	Wells (2)	2.500	.864	.417	74.3	Category 7. Occasional water losses due to breaks in the District's water mains and distribution lines. Storage capacity equals 120,000 gallons.
*Tennessee - American Water Company	23C	217,221	62,063	Tennessee River (465.0)	4,666.000	72.000	42.200	189.2	Category 1. The controlling reservoir for this reach of the Tennessee River is Chickamauga Dam located at river mile 471.0 on the Tennessee River. Tennessee-American also serves about 3.669 Mgal/d of water to the Fort Oglethorpe and Walker County UD's in Georgia. Storage capacity equals 23,000,000 gallons.

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Hamilton--Continued									
**Eastside UD	23B	26,000	7,612	Wells (3) Tennessee - American Water Company	5.000 -	3.960	3.013 .092	119.4	Categories 1 and 7. This water supply system was developed in 1936 and some of the distribution lines need to be replaced. Storage capacity equals 2,717,000 gallons.
**Hixson UD	23A	45,000	17,000	Cove Springs (3) Tennessee - American Water Company	5.000 -	8.640	4.000 .333	96.3	Categories 1 and 7. Storage capacity equals 3,180,000 gallons.
**Signal Mountain WS	23C	6,000	2,250	Tennessee - American Water Company	-	N/A	0.681	113.5	Category 1. Storage capacity equals 2,200,000 gallons.
*Waldens Ridge UD	23C	4,716	1,494	Wells (2)	1.152	1.382	.357	75.7	Category 7. Occasional turbidity problems after periods of heavy rain. Storage capacity equals 1,200,000 gallons.
Marion									
*Jasper WS	24	6,300	1,800	Sequatchie River (6.0) Blue Spring (1)	20.000 .325	.622	.010 .440	71.4	Categories 3 and 8. Storage capacity equals 617,000 gallons.
*Sequatchie Water Works	24	622	190	Owen Spring (1)	.500	.126	.085	136.7	Category 7. Inadequate storage capacity. Storage capacity equals 14,000 gallons.
*Whitwell WS	24	3,200	1,000	Sequatchie River (22.0)	16.900	1.224	.300	153.8	Category 3. Storage capacity equals 500,000 gallons.

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Marion--Continued									
**West Valley UD	24	1,300	400	Whitwell WS	-	N/A	.100	76.9	Category 3. Existing water mains and distribution lines are old and need to be replaced. Storage capacity equals 100,000 gallons.
McMinn									
*Athens Utilities Board	22C	12,523	4,624	Oostanaula Creek	5.000	4.000	1.112	177.7	Categories 3 and 7. Storage capacity equals 15,000,000 gallons.
				Spring (1)	2.160		1.113		
*Englewood WS	22C	5,110	940	Middle Creek (near State Highway 39 and L&N Railroad crossing)	4.600	.576	.275	53.8	Category 3. Moderate water losses due to system leakage from deteriorating mains and lines. Storage capacity equals 750,000 gallons.
*Etowah WD	22A	10,162	2,900	Hiwassee River (42.6)	70.300	2.600	1.559	147.8	Category 1. The controlling reservoir for this reach of the Hiwassee River is Apalachia Dam located at river mile 66.0 on the Hiwassee River in Cherokee County, North Carolina. During periods of nonpower generation at Apalachia Dam, low river levels result in pumping problems. Storage capacity equals 3,323,000 gallons.
**Hiwassee Water Corporation	22A	640	200	Etowah WS	-	N/A	.057	89.1	Category 1.

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
McMinn--Continued									
***Benton WS	22B	2,135	610	Springs (2) Hiwassee Water Corporation	.014 -	.432	.187 .001	86.6	Category 8. Benton WS serves a part of Polk County. Currently, Benton is utilizing 95 percent of the spring's capacity and water shortages are common during drought periods with spring yield dropping to about 0.160 Mgal/d. Storage capac- equals 25,000 gallons.
*Riceville UD+	22C	667	220	Spring (1)	-	.140	.044	66.0	Category 9.
Meigs									
*Decatur WS	49A	1,200	506	Spring (1)	.350	.576	.225	187.5	Category 7. Storage capacity equals 600,000 gallons for potable water and 500,000 gallons for fire protection.
Polk									
*Cherokee Mills UD+	22A	325	200	Pleasant Hill Springs (8)	-	.113	.086	264.6	Category 9.
*Copperhill WS+	22B	1,050	300	Springs (10)	-	0.050	-	-	Category 9.
*Delano WS	22A	300	55	Wells (2)	0.100	.216	0.100	333.3	Category 7. Storage capacity equals 30,000 gallons.
*Copper Basin Board of Public Utilities	22B	1,925	550	Campbell Cove Lake Wells (4) Springs (4)	See additional information - -	.500	.950 .078 .052	116.9	Categories 5 and 9. This system serves the communities of Ducktown, Postell, and Turtletown plus a 100-acre industrial park. Campbell Cove Lake is fed by a spring and small unnamed stream as its source

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Polk--Continued									
									of supply. Campbell Cove Lake has an estimated storage capacity of 1,560 acre-feet and can supply about 1,530 acre-feet or 500,000,000 gallons of water for water supply with no inflow. This provides adequate water to meet the system's demands for more than 90 days. This system can serve up to 700 customers and has a storage capacity of 500,000 gallons.
Rhea									
*Dayton WS+	49B	7,612	2,546	Tennessee River (503.9)	3,358.000	2.052	0.891	101.8	Category 1. The controlling reservoir for this reach of the Tennessee River is Watts Bar Dam located at river mile 529.9 on the Tennessee River.
**Evensville Water UD	49B	2,163	450	Dayton WS	-	N/A	.116	53.6	Category 1. Leaky water mains and distribution lines.
*Graysville WS	23A	1,636	540	Wells (2)	.200	.259	.125	76.4	Category 7. Occasional turbidity problems and inadequate storage. Storage capacity equals 180,000 gallons.

Table 21.--Public water-supply facilities, Lower Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Sequatchie									
*Dunlap WS	24	4,000	1,200	Sequatchie River (about 44.6)	8.400	.864	.522	130.5	Category 3. Occasional buildup of leaves and mud around the intake pumps and inadequate storage for water. Storage capacity equals 1,000,000 gallons.

Table 22.--Self-supplied commercial and industrial water users, Lower Tennessee River basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Bradley							
*Hardwick Stove Company (3433); Cleveland	22C	741	Wells (2) Cleveland Utilities Board	0.197 -	0.197 .047	0.004	Category 7. Product - Heating equipment.
*Magic Chef, Inc. (3631); Cleveland	22C	1,100	Springs (2) Cleveland Utilities Board	.334 -	.334 .140	.065	Category 7. Product - Household cooking equipment. Storage capacity equals 140,000 gallons.
*Olin Corporation (2812 and 2819); Charleston	22C	700	Hiwassee River, Chickamauga Reservoir (16.5)	373.000	4.900	.190	Category 5. Total storage in Chickamauga Reservoir equals 392,000 acre-feet at normal minimum pool elevation of 675 feet above sea level. This provides adequate water to meet the Corporation's water demands for more than 90 days. Product - Alkaline and chlorine as well as other industrial inorganic chemicals.
Hamilton							
*Alco Chemical Corporation (2819 and 2821); Chattanooga	23B	60	Well (1) Tennessee - American Water Company	.230 -	.230 .069	.027	Category 7. Product - Chemicals and allied products. Occasional water supply problems due to a lack of storage facilities.
*Carbonic Industries Corporation (2873); Harrison	23B	26	Tennessee River (473.0)	3,745.000	3.000	-	Category 1. The controlling reservoir for this reach of the Tennessee River is Watts Bar Dam located at river mile 529.9 on the Tennessee River. Product - Nitrogenous fertilizers.
*C. F. Industries, Inc. (2873); Harrison	23C	162	Tennessee River (473.0)	3,745.000	2.000	.011	Category 1. The controlling reservoir for this reach of the Tennessee River is Watts Bar Dam located at river mile 529.9 on the Tennessee River. Product - Nitrogenous fertilizers.
*Chattem Drug and Chemical Company (2833); Chattanooga	23C	250	Wells (3) Tennessee - American Water Company	.850 -	.850 .238	.040	Category 7. Product - Medicinal chemicals and botanical products. Storage capacity equals 40,000 gallons.
*Cumberland Corporation (3551, 3523, 3569, and 3471); Chattanooga	23C	250-400	Well (1) Tennessee - American Water Company	.238 -	.238 .015	.040	Category 7. Product - Farm, food products, and general industrial machinery and equipment.

Table 22.--Self-supplied commercial and industrial water users, Lower Tennessee River basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Hamilton--Continued							
*Dixie Yarns, Inc. (2281); Chattanooga	23C	400	Wells (2) Tennessee - American Water Company	0.535 -	0.535 .328	0.060	Category 7. Product - Cotton, manmade fibers, and silk yarns. Storage capacity equals 100,000 gallons.
*E. I. DuPont De Nemours and Company, Inc. (2821 and 2824); Chattanooga	23C	3,600	Tennessee River (469.9)	4,616.000	10.400	.155	Category 1. The controlling reservoir for this reach of the Tennessee River is Chickamauga Dam located at river mile 471.0 on the Tennessee River. Product - Nylon resin and fiber and polyester fiber.
*General Portland Inc. (3241); Chattanooga	23C	172	Tennessee River (454.6) Tennessee - American Water Company	4,666.000 -	1.450 .025	.251	Category 1. The controlling reservoir for this reach of the Tennessee River is Chickamauga Dam located at river mile 471.0 on the Tennessee River. Product - Cement. Occasional turbidity, flooding, and water-quality problems.
*Scholze Tannery (3111); Chattanooga	23C	160	Wells (2) Tennessee - American Water Company	.156 -	.156 .037	.028	Category 7. Product - Tanned and finished leather.
*Southern Cellulose Products, Inc. (2611); Chattanooga	23C	Confidential	-	-	-	-	-
*Tennessee Paper Mills, Inc. (2631); Chattanooga	23C	170	Tennessee River (463.5) Tennessee - American Water Company	4,666.000 -	.512 .008	.005	Category 1. The controlling reservoir for this reach of the Tennessee River is Chickamauga Dam located at river mile 471.0 on the Tennessee River. Product - Paperboard. Storage capacity equals 830,000 gallons.
Marion							
*General Portland, Inc. (3281); Jasper	23C	18	Tennessee River (433.0) Well (1)	4,666.000 .001	.100 .001	.001	Categories 1 and 7. The controlling reservoir for this reach of the Tennessee River is Chickamauga Dam located at river mile 471.0 on the Tennessee River. Product - Limestone. Some turbidity and water-quality problems.

Table 22.--Self-supplied commercial and industrial water users, Lower Tennessee River basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
McMinn							
*Bowaters Southern Paper Corporation (2611 and 2621); Calhoun	22C	1,450	Hiwassee River, Chickamauga Reservoir (about 18.0)	See additional information	80.000	0.240	Category 5. Total storage in Chickamauga Reservoir equals 392,000 acre-feet at normal minimum pool elevation of 675 feet above sea level. This provides sufficient storage to meet Bowaters' water demands for more than 90 days. Product - Paper.
Meigs							
*Ten Mile Stone Company, Inc. (1422); Ten Mile	49A	14	Ten Mile Creek	0.260	.248	-	Category 3. Product - Crushed limestone.
Polk							
*Cities Service Company (2819); Copperhill	22B	1,450	Ocoee River (near Davis Mill Creek) Spring (1)	43.000 .382	72.000 .382	1.210	Categories 2 and 7. Product - Sulfuric acid. Storage capacity equals 2,691,000 gallons. The controlling reservoir for this reach of the Ocoee River is Blue Ridge Dam located at river mile 53.0 on the Toccoa (Ocoee) River in Fannin County, Georgia.

Table 23.--Public water-supply facilities, Upper Tennessee River basin

[*System received all water from primary surface-water or ground-water source; ** purchases part or all water from a primary (*) source; *** purchases part or all water from a secondary (**) source; **** purchases part or all water from a tertiary (***) source]

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Blount									
*Alcoa WS	17	21,000	6,000	Little River (9.7)	31.000	24.000	11.506	478.4	Category 3. Storage capacity equals 12,000,000 gallons.
**South Blount County UD	17	18,000	4,500	Alcoa WS Maryville WS	- -	N/A	1.200 .033	68.5	Category 3. Maryville WS supplies water to South Blount County on an emergency basis only averaging about 33,000 gallons per day. Inadequate storage for treated water. Storage capacity equals 950,000 gallons.
***Friendsville WS	17	1,971	563	South Blount County UD	-	N/A	.130	66.0	Category 3. Storage capacity equals 250,000 gallons.
**Tuckaleechee UD	17	4,550	1,300	Alcoa WS	-	N/A	.260	57.1	Category 3. Acute water-supply problems due to limited pumping and line capacity. Pressure losses at higher elevations. Currently, Tuckaleechee is engaged in litigation with Alcoa regarding its right to purchase water from Maryville due to Alcoa's periodic inability to provide Tuckaleechee with adequate water supplies. Storage capacity equals 250,000 gallons.
*Calderwood Village WS+	17	44	15	First Creek (about 1.8)	1.700	.110	.011	250.0	Category 3.

Table 23.--Public water-supply facilities, Upper Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Blount--Continued									
*Maryville WS	17	17,000	8,268	Little River (about 17.3)	29.000	6.000	2.300	133.4	Category 3. Storage capacity equals 3,500,000 gallons. Completion of the Foothills Mall in the spring of 1983 has not significantly increased this system's water use.
*Walland WS	17	67	28	Well (1)	.086	N/A	.002	29.9	Category 7. Storage capacity equals 12,000 gallons.
Knox									
*First UD of Knox County	17	26,000	10,400	Tennessee River (617.5)	1,322.000	4.500	4.000	155.6	Categories 1 and 7. The controlling upstream reservoirs for this reach of the Tennessee River are Cherokee and Douglas Dams located at river miles 52.3 and 32.3 on the Holston and French Broad Rivers, respectively. Storage capacity equals 3,800,000 gallons.
				Spring (1)	.450		.045		
*Knoxville Utilities Board	17	186,100	55,338	Tennessee River (649.2)	1,293.000	50.000	34.000	177.3	Category 1. The controlling upstream reservoirs for this reach of the Tennessee River are Cherokee and Douglas Dams located at river miles 52.3 and 32.3 on the Holston and French Broad Rivers, respectively. Storage capacity equals 18,600,000 gallons.

Table 23.--Public water-supply facilities, Upper Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Knox--Continued									
*West - Knox UD	17	41,670	12,500	Clinch River, Melton Hill Reservoir (36.5)	See additional information	6.500 (2 plants)	1.500	60.0	Category 5. Total storage in Melton Hill Reservoir equals 94,100 acre-feet at normal minimum pool elevation of 790 feet above sea level. This provides sufficient water to meet the UD's water demands for more than 90 days. Storage capacity equals 4,600,000 gallons.
				Clinch River, Melton Hill Reservoir (46.5)	See additional information		1.000		
Loudon									
*Lenoir City Utility Board	21C	5,652	2,498	Tennessee River (601.3)	892.000	3.000	1.000	169.9	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Fort Loudoun Dam located at river mile 602.3 on the Tennessee River. Storage capacity equals 3,375,000 gallons.
**Dixie Lee UD	21C	10,450	2,090	Allen Fine Spring	.576	.800	.650	49.8	Categories 1 and 8. Storage capacity equals 1,050,000 gallons.
				Lenoir City Utility Board	-		.040		
***Martel UD	21C	1,750	500	Dixie Lee UD	-	N/A	.170	97.1	Categories 1 and 8. Experienced extensive water losses in the winter of 1982 due to water leaks in water mains and distribution lines. Storage capacity equals 20,000 gallons.

Table 23.--Public water-supply facilities, Upper Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Loudon--Continued									
*Loudon UD	21A	14,000	4,000	Tennessee River (593.0)	892.000	4.000	4.000	308.9	Categories 1 and 8. The controlling upstream reservoir for this reach of the Tennessee River is Fort Loudoun Dam located at river mile 602.3 on the Tennessee River. Storage capacity equals 7,000,000 gallons.
				Robinson Spring	.216		.325		
*Piney UD+	21A	1,515	547	Spring (1)	0.175	0.140	0.115	75.9	Category 7.
Monroe									
*Sweetwater Board of Public Utilities	21A	6,831	2,277	Sweetwater Creek (21.6)	2.900	2.200	.600	146.4	Categories 3 and 7. Some turbidity after periods of intense rainfall. Storage capacity equals 3,165,000 gallons.
				Cannon Spring	.485		.400		
*Tellico Area Services System	18B and C	1,470	420	Little Tennessee River, Tellico Reservoir (about 19.2)	See additional information	3.450	.900	319.7	Category 5. Total storage in Tellico Reservoir equals 321,300 acre-feet at normal minimum pool elevation of 807 feet above sea level. This provides sufficient water to meet the system's water demands for more than 90 days. Essentially, this system serves the Vonore-Greenback and U.S. Highway 411 corridor area. The system also has the capability to expand its treatment plant capacity to 8.6 Mgal/d, if needed, and plans to sell water to

Table 23.--Public water-supply facilities, Upper Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Monroe--Continued									
									the Friendsville, Glendale, and South Blount UD's as well as the Sweetwater Board of Public Utilities in the future. Storage capacity equals 1,800,000 gallons.
**Madisonville WD+	18B	4,353	1,456	Tellico Area Services System	-	0.720	0.430	98.8	Category 5.
*Tellico Plains WS+	18B	1,943	611	Wells (3)	1.152	.504	.204	105.0	Category 7.
Rhea									
*Spring City WS+	21B	2,814	956	Piney River, Watts Bar Reservoir (about 5.7)	See additional information	.657	.220	195.5	Categories 5 and 8. Total storage in Watts Bar Reservoir equals 796,000 acre-feet at normal minimum pool elevation of 735 feet above sea level. This is adequate to meet the system's water demands for more than 90 days.
				Spring (1)	.144		.330		
Roane									
*Kingston WS	21A	5,389	2,160	Tennessee River (568.3)	892.000	2.000	.360	104.8	Categories 1 and 7. The controlling upstream reservoir for this reach of the Tennessee River is Fort Loudoun Dam located at river mile 602.3 on the Tennessee River. Storage capacity equals 1,000,000 gallons.
				Spring (Swan Pond area)	.280		.205		

Table 23.--Public water-supply facilities, Upper Tennessee River basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Roane--Continued									
*Rockwood WS	21B	9,600	3,200	Tennessee River (553.0)	1,064.000	6.000	1.500	130.2	Category 1. The controlling upstream reservoirs for this reach of the Tennessee River are Fort Loudoun Dam located at river mile 602.3 on the Tennessee River and Melton Hill Dam located at river mile 23.1 on the Clinch River. Occasional turbidity problems. Storage capacity equals 3,670,000 gallons.
**Midtown UD	21B	4,200	1,050	Rockwood WS	-	N/A	0.250	59.5	Category 1. Storage capacity equals 400,000 gallons.

Table 24.--Self-supplied commercial and industrial water users, Upper Tennessee River basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Knox							
*Candora Marble Company (1411); Knoxville	17	75	Well (1) Knoxville Utilities Board	0.720 -	0.150 .001	-	Category 7. Product - Marble.
*East Tennessee Packing Company (5142); Knoxville	17	400	Wells (3) Knoxville Utilities Board	1.440 -	.720 .010	0.025	Category 7. Product - Distribution of meat products. Storage capacity equals 252,720 gallons.
*Southern Cast Stone Company, Inc. (3272); Knoxville	17	134	Well (1) Knoxville Utilties Board	.127 -	.144 .035	.028	Category 7. Product - Precast concrete building materials
Loudon							
*Greenback Industries, Inc. (3399); Greenback	18C	103	Unnamed tributary of Baker Creek Tellico Area Services System	See additional information -	.125 .013	.007	Category 5. Source capacity data for this unnamed tributary of Baker Creek is not available due to inadequate records. Product - Metallic powder. Storage capacity equals 40,000 gallons.
*Union Carbide Corporation, Films Packaging Division (2821); Loudon	21A	500	Tennessee River (591.8) Loudon UD	893.100 -	2.931 .042	.102	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Fort Loudoun Dam located at river mile 602.3 on the Tennessee River. Product - Cellulose food casing. Storage capacity equals 250,000 gallons.

Table 25.--Public water-supply facilities, Tennessee River Western Valley basin

[*System received all water from primary surface-water or ground-water source; ** purchases part or all water from a primary (*) source; *** purchases part or all water from a secondary (**) source; **** purchases part or all water from a tertiary (***) source]

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Benton									
*Big Sandy WS	37	650	337	Wells (2)	0.120	0.240	0.068	104.6	Category 7. Storage capacity equals 100,000 gallons.
*Camden WD	36A	7,614	2,716	Tennessee River (100.4)	8,869.700	1.500	.900	118.2	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Occasional turbidity problems after heavy rains. Storage capacity equals 1,500,000 gallons.
Carroll									
*Bruceton WS	37	1,600	700	Wells (3)	-	N/A	.350	218.8	Category 9. Inadequate storage capacity. Storage capacity equals 100,000 gallons.
*Clarksburg UD	37	653	250	Well (1)	-	1.440	.089	136.3	Category 9.
*Hollow Rock WS	37	990	340	Wells (2)	.100	N/A	.069	69.7	Category 7. Storage capacity equals 50,000 gallons.
Decatur									
*Parsons WS	32	3,000	1,214	Beech River (10.0)	16.100	2.880	.594	146.0	Category 3. Periodic turbidity and clogging of the raw water pumps due to excessive accumulation of leaves and mud. Storage capacity equals 760,00 gallons.

Table 25.--Public water-supply facilities, Tennessee River Western Valley basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Decatur--Continued									
**Decaturville UD	32	1,600	500	Parsons WS	-	N/A	.096	60.0	Category 3. Storage capacity equals 500,000 gallons.
**Perryville UD	32	1,118	430	Parsons WS	-	N/A	0.060	53.7	Category 3. Inadequate storage capacity. Storage capacity equals 50,000 gallons.
Hardin									
*First UD of Hardin County	46	2,786	925	Tennessee River (about 207.0)	7,693.000	1.000	.450	161.5	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Wilson Dam located at river mile 259.4 on the Tennessee River. Storage capacity equals 650,000 gallons.
*Saltillo UD	30	500	245	Wells (2)	1.163	1.200	.059	118.0	Category 7. Storage capacity equals 60,000 gallons.
*Savannah Public Utilities Department	29	19,200	6,000	Wells (6)	2.016	2.317	1.400	72.9	Category 7. Storage capacity equals 1,650,000 gallons.
Henderson									
*Lexington WS	32	14,762	4,900	Beech River, Beech Reservoir (35.0)	See additional information	4.000	1.600	108.4	Category 5. Beech Reservoir has an estimated storage capacity of about 1,100 acre-feet of which approximately 880 acre-feet or 286,750,000 gallons of water are available for water supply with no inflow. This would provide ample water to meet the System's water demands for more than

Table 25.--Public water-supply facilities, Tennessee River Western Valley basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Henderson--Continued									
									90 days. Storage capacity equals 2,050,000 gallons.
*Sardis WS	30	668	255	Wells (2)	-	0.086	0.040	59.9	Category 9.
Henry									
*Henry County Water Company	37	1,350	450	Wells (3)	-	.500	.200	148.1	Category 9. Serious water leaks due to faulty mains and distribution lines. Storage capacity equals 650,000 gallons.
*Paris Board of Public Utilities	37	11,021	4,200	Wells (4)	7.200	6.000	2.000	168.8	Category 7. Storage capacity equals 2,300,000 gallons.
**Northwest Henry County UD	37	1,330	380	Paris Board of Public Utilities	-	N/A	.040	30.1	Category 7.
**South Paris Water Cooperative	37	1,105	400	Paris Board of Public Utilities	-	N/A	.100	90.5	Category 7.
*Puryear WS+	45B	832	320	Wells (2)	-	.173	.065	78.1	Category 9.
*West Tennessee Water Company	37	1,200	375	Wells (3)	-	N/A	.120	100.0	Category 9. Storage capacity equals 6,500 gallons.
Humphreys									
*New Johnsonville WS	33D	1,957	550	Tennessee River (100.5)	8,869.700	1.000	.250	127.7	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Storage capacity equals 800,000 gallons. Total

Table 25.--Public water-supply facilities, Tennessee River Western Valley basin--Continued

County and facility name	Tributary basin No.	Population served	Number of connections	Water source and intake location (river mile)	Source capacity (Mgal/d)	Plant design capacity (Mgal/d)	Average water use (Mgal/d)	Gross per capita water use (gal/d)	Additional information (existing problems, and so forth)
Humphreys--Continued									
									water withdrawals will increase to 0.500 Mgal/d in the next 2 to 5 years.
McNairy									
*Adamsville WS	30	5,829	1,450	Tennessee River (197.1)	8,522.000	0.576	0.528	90.6	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. By early 1984, Adamsville will have two wells in service. Thereafter, Adamsville will utilize the wells for their primary source and use the Tennessee River only as a backup source. Inadequate storage capacity. Storage capacity equals 1,050,000 gallons.
*Michie WD	30	2,360	590	Wells (3)	-	.561	.153	64.8	Category 9. Storage capacity equals 240,000 gallons.
Wayne									
*Clifton WD	31	829	385	Tennessee River (158.2)	8,522.000	.288	.085	102.5	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Storage capacity equals 650,000 gallons.
*Collinwood WD+	31	1,897	668	Springs (3)	-	.144	.092	48.5	Category 9.

Table 26.--Self-supplied commercial and industrial water users, Tennessee River Western Valley basin

[*System received all water from primary surface-water or ground-water source]

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Benton							
*Hardy Sand Company (1446); Camden	36A	40	Cotton Creek	See additional information	2.000	-	Categories 6 and 9. Source capacity data for Cotton Creek are not available because of inadequate data. The estimated storage capacity of the ponds is about 30 acre-feet of which about 24 acre-feet or 7,820,000 gallons are available for water supply with no inflow. This would not provide adequate water to meet Hardy's water demands for 90 days. Product - Glass sand. Occasional water shortages.
			Ponds	See additional information	6.700		
			Well (1)	-	.072		
Hardin							
*Tennessee River Pulp and Paper Company (2611); Counce	30	500	Tennessee River (206.9)	7,693.000	19.500	0.412	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Wilson Dam located at river mile 259.4 on the Tennessee River. Periodic turbidity problems. Product - Wood pulp.
			First UD of Hardin County	-	.036		
Henry							
*H. C. Spinks Clay Company, Inc. (3251); Paris	37	99	Wells (3)	-	.300	.002	Category 9. Product - Clay.
*Southern Clay, Inc. (3251); Paris	37	80 to 100	Well (1)	-	.252	.335	Category 9. Product - Clay.
			Paris Board of Public Utilities	-	.086		
*Tennessee Asphalt Company (2951); Buchanan	45A	6	Blood River	See additional information	.100	-	Category 6. Source capacity data for the Blood River are not available due to the lack of data. The estimated storage capacity of the pond equals 15 acre-feet of which about 12 acre-feet or 3,900,000 gallons are available for water supply with no inflow. This would not provide adequate water to meet the Company's water demands for 90 days. Product - Asphalt.
			Pond (1)	See additional information	.600		

Table 26.--Self-supplied commercial and industrial water users, Tennessee River Western Valley basin--Continued

County, industry name (SIC code), and location by city	Tributary basin No.	Number of employees	Water source and intake location (river mile)	Source capacity (Mgal/d)	Average water use (Mgal/d)	Average consumptive water use (Mgal/d)	Additional information (principal products, existing problems, and so forth)
Humphreys							
*Consolidated Aluminum Corporation (3334); Waverly	36B	750	Tennessee River (95.5)	8,869.700	6.000	-	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Product - Primary aluminum. Storage capacity equals 200,000 gallons.
*E. I. DuPont De Nemours and Company (2816); New Johnsonville	36B	900	Tennessee River (98.6)	8,869.700	52.531	1.564	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Product - Inorganic pigments. Occasional problems with turbidity.
*Foote Mineral Company (3313); New Johnsonville	33D	145	Tennessee River (101.9)	8,869.700	.331	.004	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Product - Electrolytic manganese metal.
*Inland Container Corporation (2631); New Johnsonville	36B	185	Tennessee River (94.5)	8,869.700	2.940	-	Category 1. The controlling upstream reservoir for this reach of the Tennessee River is Pickwick Landing Dam located at river mile 206.7 on the Tennessee River. Product - Paperboard. Storage capacity equals 800,000 gallons.