Mining

3,770 million gallons per day

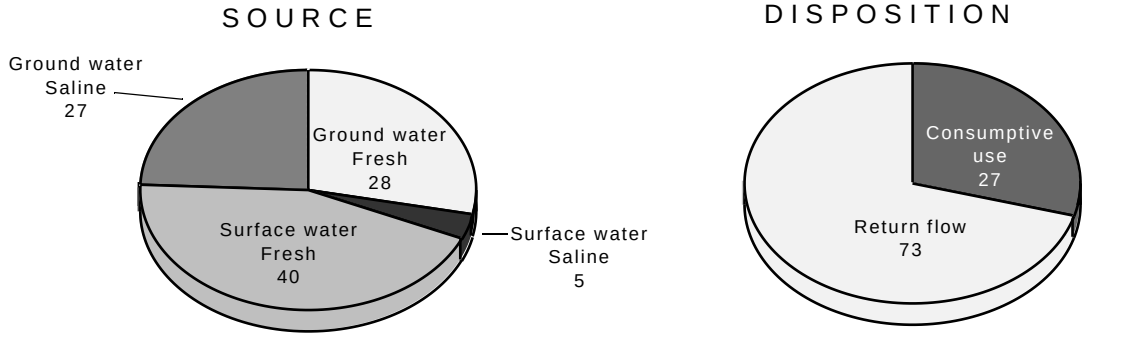
Total mining water use during 1995 was an estimated 3,770 Mgal/d and included 1,210 Mgal/d of saline water (table 21). Mining freshwater use during 1995 was 22 percent less than during 1990, and represents less than 1 percent of freshwater use for all offstream categories. Much of the decrease can be attributed to not including dewatering as a mining water use.

The source and disposition of water for mining purposes for 1995 are shown in the chart below. Ground water was the source for about 55 percent of total mining withdrawals, and surface water was the source for the remaining 45 percent. Saline water accounted for approximately one-third of total mining withdrawals. Total consumptive use in 1995 was about 1,020 Mgal/d or 27 percent of total withdrawals.

Mining water use includes water for the extraction of naturally occurring minerals; solids, such as coal and ores; liquids, such as crude petroleum; and gases, such as natural gas. The category includes quarrying, milling (crushing, screening, washing, and flotation), and other operations as part of mining activity. All water is self supplied, and saline water is significant. Dewatering is no longer considered as a mining water use unless the water is put to a beneficial use, such as washing or dust control.

Water used in mining is difficult to quantify. Except for some washing and milling, water used at mining sites tends to be an impediment to or a by-product of the extraction process. Unless water is needed for the mining operation, little attention is paid to quantities withrawn. Estimates for mining withdrawals were obtained from State agencies that regulate discharges, or by use of coefficients for the relation between the quantity of water withdrawn and the quantity of material extracted. Consumptive-use estimates were based on coefficients, ranging from 10 to 90 percent of withdrawals, depending on the type of mining activity.

Most water withdrawn for mining use during 1995 was in the Texas-Gulf water-resources region, followed by the Great Lakes region, as shown in figure 23 and table 21. By State, Texas, Minnesota, and Florida had the most freshwater and saline water withdrawn for mining (figure 24; table 22), and accounted for about 32 percent of the Nation's total mining withdrawals. Minnesota, Florida, Texas and Pennsylvania had the most freshwater withdrawn for mining. (See figure 25 and table 22.)



MINING SOURCE AND DISPOSITION, 1995, IN PERCENT

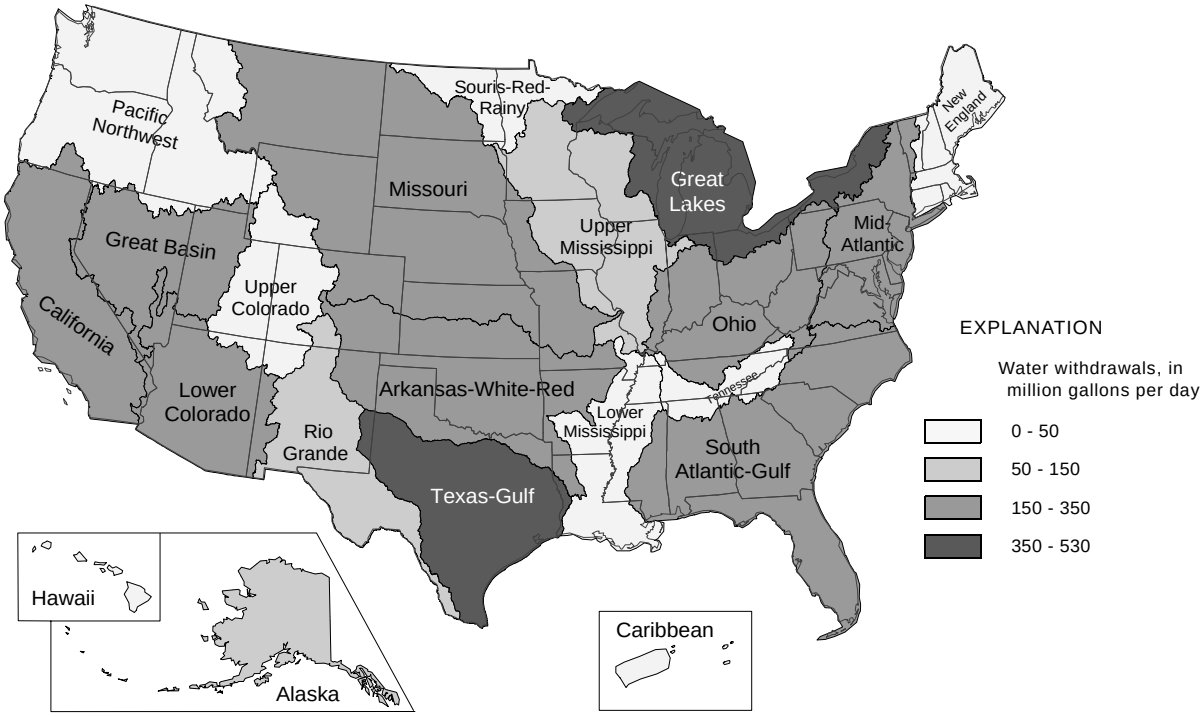


Figure 23. Mining water withdrawals (fresh, saline) by water-resources region, 1995.

Table 21. Mining water use by water-resources region, 1995

[Figures may not add to totals because of independent rounding. All values in million gallons per day]

REGION	WITHDRAWALS									CONSUMPTIVE USE		
	By source and type						Total					
	Ground water			Surface water								
	Fresh	Saline	Total	Fresh	Saline	Total	Fresh	Saline	Total	Fresh	Saline	Total
New England	2.9	0	2.9	21	0	21	24	0	24	3.8	0	3.8
Mid-Atlantic	159	1.0	160	163	7.5	170	321	8.6	330	34	2.2	36
South Atlantic-Gulf	177	9.1	186	162	0	162	339	9.1	348	26	0	26
Great Lakes	34	1.0	35	356	6.5	363	390	7.6	398	35	1.9	37
Ohio	115	22	137	212	.6	213	327	23	349	54	22	76
Tennessee	3.7	0	3.7	7.2	0	7.2	11	0	11	1.4	0	1.4
Upper Mississippi	22	4.2	26	112	0	112	134	4.2	138	19	4.2	24
Lower Mississippi	3.1	0	3.1	2.2	0	2.2	5.3	0	5.3	.7	0	.7
Souris-Red-Rainy	.4	0	.4	1.0	0	1.0	1.4	0	1.4	.4	0	.4
Missouri Basin	104	38	143	201	0	201	306	38	344	58	8.6	66
Arkansas-White-Red	30	284	314	26	0	26	56	284	340	25	0	25
Texas-Gulf	118	324	442	79	0	79	197	324	521	194	0	194
Rio Grande	53	60	113	2.1	0	2.1	55	60	115	36	0	36
Upper Colorado	20	14	34	3.5	0	3.5	23	14	38	12	1.7	14
Lower Colorado	126	12	138	26	2.3	28	152	14	166	116	11	126
Great Basin	71	19	90	2.8	143	146	74	162	236	71	145	216
Pacific Northwest	6.5	0	6.5	29	0	29	35	0	35	12	0	12
California	16	151	167	62	0	62	78	151	229	77	34	110
Alaska	0	75	75	24	41	65	24	116	140	1.3	9.7	11
Hawaii	.5	0	.5	.1	0	.1	.5	0	.5	.5	0	.5
Caribbean	3.4	0	3.4	1.1	0	1.1	4.5	0	4.5	1.4	0	1.4
Total	1,070	1,010	2,080	1,490	201	1,690	2,560	1,210	3,770	780	240	1,020

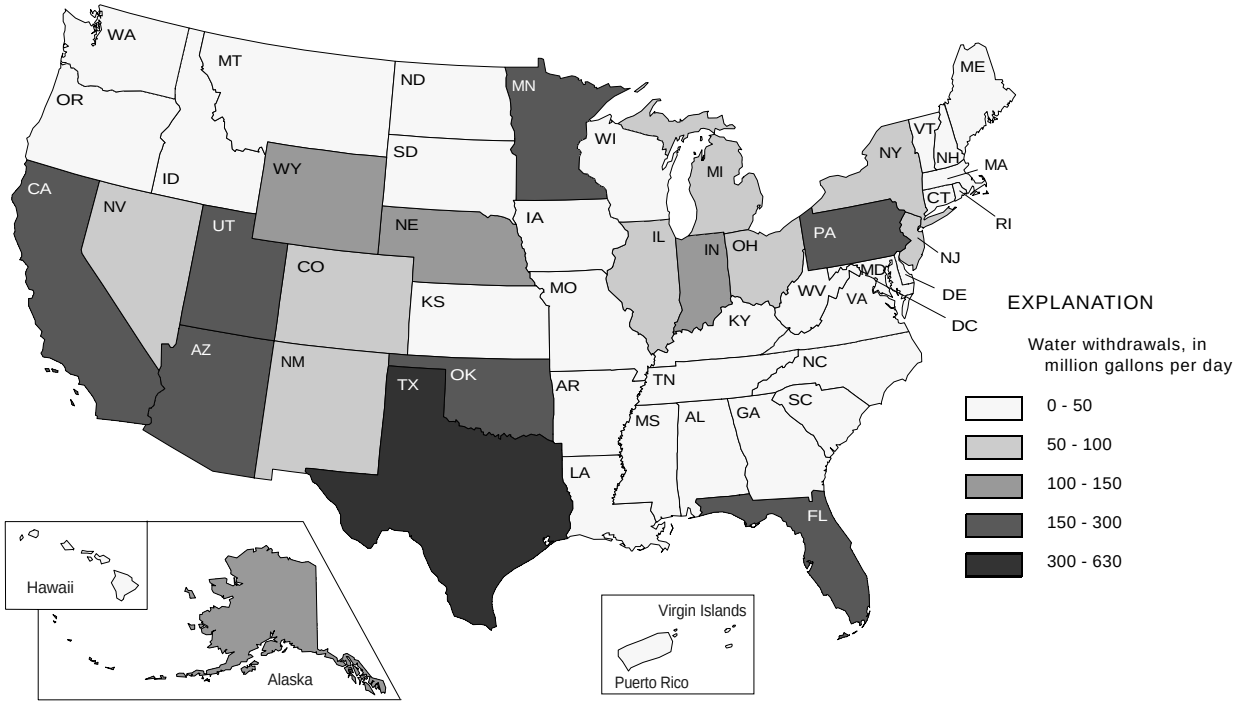


Figure 24. Mining withdrawals (fresh, saline) by State, 1995.

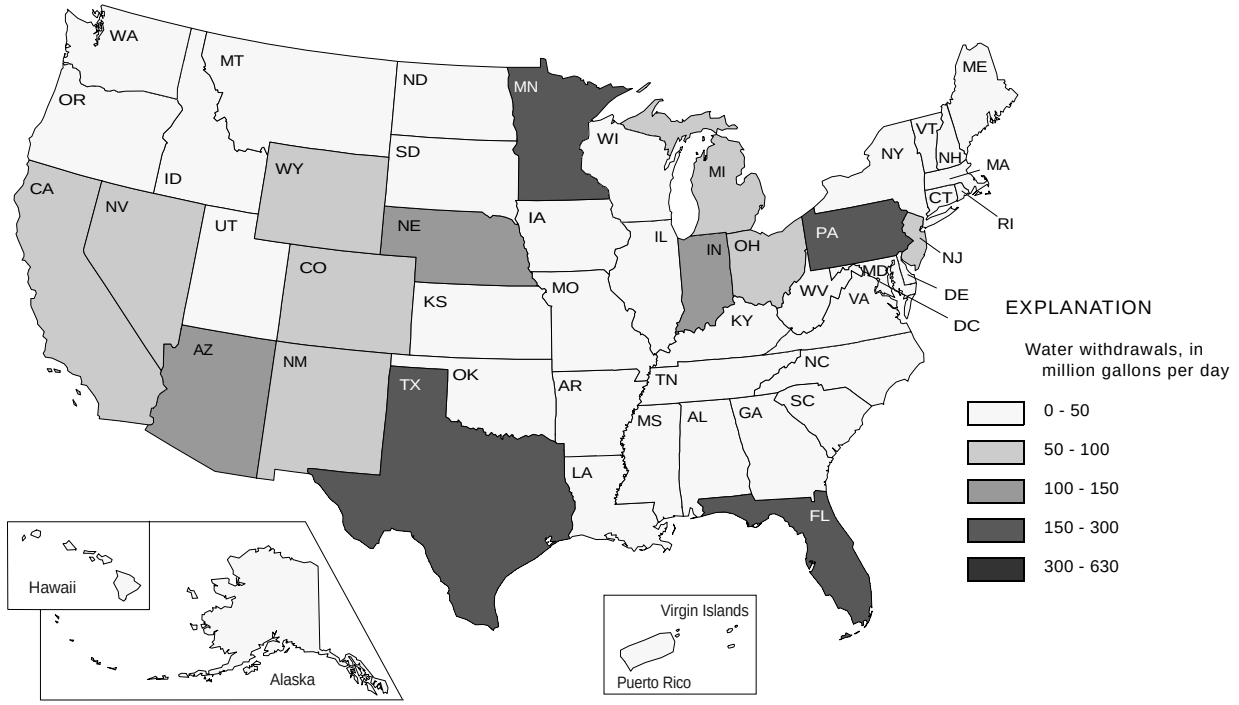


Figure 25. Mining freshwater withdrawals by State, 1995.

Table 22. Mining water use by State, 1995

[Figures may not add to totals because of independent rounding. All values in million gallons per day]

STATE	WITHDRAWALS									CONSUMPTIVE USE		
	By source and type						Total					
	Ground water			Surface water								
	Fresh	Saline	Total	Fresh	Saline	Total	Fresh	Saline	Total	Fresh	Saline	Total
Alabama	4.0	9.1	13	7.0	0	7.0	11	9.1	20	0	0	0
Alaska	0	75	75	24	41	65	24	116	140	1.3	9.7	11
Arizona	119	12	131	25	2.3	27	144	14	158	109	11	120
Arkansas	0	0	0	.1	0	.1	.1	0	.1	0	0	0
California	14	151	165	62	0	62	76	151	227	75	34	109
Colorado	25	17	41	27	0	27	52	17	68	20	2.8	23
Connecticut	.3	0	.3	1.4	0	1.4	1.7	0	1.7	.3	0	.3
Delaware	0	0	0	0	0	0	0	0	0	0	0	0
D.C.	0	0	0	0	0	0	0	0	0	0	0	0
Florida	148	0	148	148	0	148	296	0	296	15	0	15
Georgia	8.7	0	8.7	2.9	0	2.9	12	0	12	1.4	0	1.4
Hawaii	.5	0	.5	.1	0	.1	.5	0	.5	.5	0	.5
Idaho	1.2	0	1.2	27	0	27	29	0	29	10	0	10
Illinois	5.5	25	31	44	0	44	50	25	75	10.0	25	35
Indiana	10	0	10	126	0	126	137	0	137	8.2	0	8.2
Iowa	1.1	0	1.1	42	0	42	43	0	43	0	0	0
Kansas	13	0	13	11	0	11	24	0	24	5.1	0	5.1
Kentucky	7.4	0	7.4	21	0	21	28	0	28	.8	0	.8
Louisiana	.4	0	.4	1.4	0	1.4	1.8	0	1.8	0	0	0
Maine	1.3	0	1.3	3.7	0	3.7	5.0	0	5.0	.9	0	.9
Maryland	.9	0	.9	4.3	0	4.3	5.2	0	5.2	1.0	0	1.0
Massachusetts	.5	0	.5	2.7	0	2.7	3.2	0	3.2	.3	0	.3
Michigan	7.1	.8	7.9	51	0	51	58	.8	58	2.9	.1	3.0
Minnesota	6.3	0	6.3	292	0	292	298	0	298	12	0	12
Mississippi	3.5	0	3.5	.2	0	.2	3.7	0	3.7	.9	0	.9
Missouri	8.6	0	8.6	15	0	15	24	0	24	2.4	0	2.4
Montana	2.8	13	16	3.8	0	3.8	6.6	13	20	1.1	0	1.1
Nebraska	6.1	4.7	11	134	0	134	141	4.7	145	2.1	0	2.1
Nevada	65	11	76	3.5	0	3.5	68	11	80	68	11	80
New Hampshire	0	0	0	7.0	0	7.0	7.0	0	7.0	1.4	0	1.4
New Jersey	2.4	0	2.4	87	0	87	90	0	90	7.2	0	7.2
New Mexico	61	0	61	.7	0	.7	61	0	61	39	0	39
New York	11	1.5	13	34	15	49	45	16	62	13	4.4	17
North Carolina	12	0	12	4.3	0	4.3	16	0	16	9.3	0	9.3
North Dakota	3.8	0	3.8	2.0	0	2.0	5.8	0	5.8	.7	0	.7
Ohio	47	0	47	46	0	46	93	0	93	52	0	52
Oklahoma	5.4	259	264	0	0	0	5.4	259	264	1.5	0	1.5
Oregon	1.2	0	1.2	0	0	0	1.2	0	1.2	.6	0	.6
Pennsylvania	211	0	211	41	0	41	252	0	252	25	0	25
Rhode Island	.5	0	.5	5.7	0	5.7	6.2	0	6.2	.8	0	.8
South Carolina	2.9	0	2.9	0	0	0	2.9	0	2.9	.3	0	.3
South Dakota	7.8	0	7.8	20	0	20	27	0	27	6.8	0	6.8
Tennessee	2.8	0	2.8	2.7	0	2.7	5.5	0	5.5	.6	0	.6
Texas	128	409	538	83	0	83	211	409	621	211	0	211
Utah	16	7.3	23	.9	143	144	16	150	167	12	133	145
Vermont	.3	0	.3	2.8	0	2.8	3.0	0	3.0	.6	0	.6
Virginia	2.6	0	2.6	37	0	37	39	0	39	4.7	0	4.7
Washington	2.8	0	2.8	.7	0	.7	3.5	0	3.5	.5	0	.5
West Virginia	3.7	.5	4.2	7.5	0	7.5	11	.5	12	2.2	.5	2.7
Wisconsin	7.9	0	7.9	4.3	0	4.3	12	0	12	2.5	0	2.5
Wyoming	71	18	90	25	0	25	96	18	115	40	7.5	47
Puerto Rico	2.8	0	2.8	1.4	0	1.4	4.2	0	4.2	1.3	0	1.3
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,070	1,010	2,080	1,490	201	1,690	2,560	1,210	3,770	780	240	1,020