

Quality of Ground Water

QUALITY OF GROUND WATER

Letter E indicates estimated value.

ANOKA COUNTY

STATION NUMBER	DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	BARO- METRIC PRES- SURE (MM OF HG) (00025)
451104093212801	06-29-99	1000	696	672	7.0	7.1	11.4	2.8	--
	06-29-99	1009	696	666	7.0	7.1	11.4	2.8	--
451315093202501	06-30-99	1000	584	580	7.4	7.5	14.9	3.8	736
	06-30-99	1009	584	561	7.4	7.5	14.9	3.8	736

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN,AM- MONIA+ ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)
06-29-99	1.5	--	320	227	277	<.020	.027	.24	11.5	.019
06-29-99	1.5	--	--	227	277	--	--	--	--	--
06-30-99	7.6	78	270	177	216	<.020	<.010	.11	6.45	.021
06-30-99	7.6	78	--	177	216	--	--	--	--	--

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
06-29-99	.027	81	30	9.0	.2	.77	26	35	.15	19
06-29-99	--	--	--	--	--	--	--	--	--	--
06-30-99	.023	79	17	8.3	.2	1.4	44	9.3	.12	22
06-30-99	--	--	--	--	--	--	--	--	--	--

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
06-29-99	--	--	--	.035	--	--	--	--	<10	--
06-29-99	<1	65	<1.0	--	<1.0	<1.0	1.9	5.5	--	<1.0
06-30-99	--	--	--	.042	--	--	--	--	<10	--
06-30-99	<1	46	<1.0	--	<1.0	2.0	<1.0	1.2	--	<1.0

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ALUM- INIUM, DIS- SOLVED (UG/L AS AL) (01106)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
06-29-99	5.7	--	--	--	--	--	--	407	388
06-29-99	6.0	5.0	<1.0	1.7	<1.0	<1.0	<1	--	--
06-30-99	<3.0	--	--	--	--	--	--	357	316
06-30-99	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	1	--	--

QUALITY OF GROUND WATER--Continued

BELTRAMI COUNTY

STATION NUMBER	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (90095)	PH WATER FIELD (STAND-ARD) (US/CM) (00400)	PH WATER LAB (STAND-ARD) (US/CM) (00403)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	HARD-NESS TOTAL AS (MG/L) (00900)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)		
472533094284500	07-01-99	1100	208	209	8.3	8.1	8.6	4.2	724	110	92		
	07-01-99	1109	208	210	8.3	8.1	8.6	4.2	724	--	92		
	DATE	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, AM-MONIA + ORGANIC DIS-SOLVED (MG/L AS N) (00623)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
	07-01-99	112	<.020	<.010	<.10	<.050	.060	.051	33	6.3	2.2	.1	.35
	07-01-99	112	--	--	--	--	--	--	--	--	--	--	--
	DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
	07-01-99	.71	4.0	<.10	19	--	--	--	<.010	--	--	--	--
	07-01-99	--	--	--	--	<1	2.3	<1.0	--	<1.0	<1.0	<1.0	<1.0
	DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	
	07-01-99	<10	--	12	--	--	--	--	--	--	140	120	
	07-01-99	--	<1.0	13	<1.0	<1.0	159	<1.0	<1.0	<1	--	--	

COOK COUNTY

STATION NUMBER	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (90095)	PH WATER FIELD (STAND-ARD) (US/CM) (00400)	PH WATER LAB (STAND-ARD) (US/CM) (00403)	TEMPER-ATURE (DEG C) (00010)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)
475237089515501	08-16-99	1045	313	340	9.2	9.3	8.2	743	.6
475325089491001	08-16-99	1420	1620	1700	8.8	8.5	14.1	739	.4
475400089470001	08-24-99	1400	50	58	5.7	6.0	15.1	--	1.3
475431089461601	08-16-99	1230	E1960	1930	8.2	7.8	15.4	742	.1
475500089510001	08-19-99	1500	4300	4450	7.2	7.4	10.9	--	.6
475508089444101	08-17-99	1100	617	546	8.4	8.3	6.6	750	1.8
475549089430201	08-17-99	1200	2150	2210	7.8	7.8	9.6	750	.3
475650089433401	08-18-99	1415	608	630	9.1	8.9	11.3	--	.2
475700089460001	08-24-99	1245	123	138	8.6	8.6	6.6	--	4.2
475700089500001	08-19-99	1300	124	136	7.1	7.5	9.6	--	7.9
475700089500002	08-19-99	1130	132	145	6.3	7.0	15.6	731	2.9
475800089400002	08-24-99	1735	252	262	6.2	6.5	11.5	--	4.9
475800089400004	08-24-99	1600	112	125	6.4	6.8	10.3	--	4.9
475800089410002	08-25-99	1100	181	188	7.4	7.4	16.1	--	7.4
475800089470001	08-17-99	1645	84	102	7.1	6.7	8.2	731	7.0
475801089410901	08-24-99	1100	878	839	7.4	7.5	7.5	--	.4
480001089353401	08-18-99	1225	729	772	9.2	8.6	6.5	--	.1
480035089424201	08-17-99	1500	109	120	6.8	6.8	10.1	--	6.5

QUALITY OF GROUND WATER--Continued

COOK COUNTY--Continued

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)
08-16-99	6	--	116	124	105	<.020	<.010	E.07	<.050	<.050
08-16-99	4	170	31	44	38	<.020	<.010	.21	<.050	<.050
08-24-99	13	25	17	18	21	.039	<.010	1.0	<.050	E.034
08-16-99	1	300	28	27	3	.072	<.010	<.10	<.050	<.050
08-19-99	6	1300	27	32	33	<.020	<.010	E.05	<.050	<.050
08-17-99	15	84	79	79	91	<.020	<.010	<.10	<.050	<.050
08-17-99	3	700	98	103	120	.029	<.010	.10	<.050	<.050
08-18-99	2	62	34	33	27	<.020	<.010	E.05	<.050	<.050
08-24-99	35	44	52	65	63	<.020	<.010	E.06	<.050	<.050
08-19-99	73	67	61	64	74	<.020	<.010	1.3	.255	<.050
08-19-99	30	69	61	67	74	<.020	<.010	.25	<.050	<.050
08-24-99	46	71	46	53	56	<.020	<.010	.30	.070	<.050
08-24-99	45	46	39	45	48	<.020	<.010	.25	<.050	<.050
08-25-99	77	57	49	56	60	<.020	<.010	.39	<.050	<.050
08-17-99	60	48	40	45	48	<.020	<.010	E.07	.108	<.050
08-24-99	0	340	170	195	207	.030	<.010	.10	<.050	.055
08-18-99	1	80	44	46	43	<.020	<.010	.11	<.050	<.050
08-17-99	58	56	60	56	73	<.020	<.010	.38	<.050	.060
DATE	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
08-16-99	<.050	<.010	4.4	E.11	72	--	.48	23	6.7	1.0
08-16-99	<.050	<.010	66	.58	257	9	2.0	450	58	1.2
08-24-99	<.050	<.010	5.9	2.6	1.7	.1	.32	.15	4.4	<.10
08-16-99	<.050	<.010	92	16	219	6	2.0	470	50	1.6
08-19-99	<.050	<.010	500	3.7	321	4	1.1	1400	25	1.7
08-17-99	<.050	<.010	33	.37	91	4	.33	130	28	.29
08-17-99	<.050	<.010	250	20	135	2	1.8	620	11	.22
08-18-99	<.050	<.010	21	2.2	98	5	.60	32	190	.58
08-24-99	<.050	<.010	14	1.9	13	.8	.31	.41	4.9	.22
08-19-99	<.050	<.010	21	3.6	1.5	.1	.13	.37	3.8	<.10
08-19-99	<.050	<.010	18	6.0	1.6	.1	.30	.17	3.4	<.10
08-24-99	<.050	<.010	18	6.5	23	1	.86	41	6.4	<.10
08-24-99	<.050	<.010	12	3.9	7.4	.5	.63	5.5	5.9	<.10
08-25-99	<.050	<.010	14	5.1	16	.9	.62	20	2.7	<.10
08-17-99	<.050	<.010	13	3.9	1.7	.1	.35	<.10	<.10	<.10
08-24-99	<.050	<.010	75	37	46	1	3.7	89	120	.88
08-18-99	<.050	<.010	15	10	113	6	6.4	200	6.6	.71
08-17-99	<.050	<.010	14	5.2	2.0	.1	.36	.17	4.3	<.10
DATE	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)
08-16-99	13	<1	<1.0	<1.6	736	290	11	<.1	<20	--
08-16-99	22	<1	61	<1.6	305	<10	2.9	<.1	<20	880
08-24-99	19	<1	8.9	<1.6	E8.7	2200	262	<.1	<20	47
08-16-99	10	2	33	<1.6	693	10	48	<.1	<20	861
08-19-99	16	<1	150	<4.8	184	77	210	<.1	<60	2300
08-17-99	18	<1	8.0	<1.6	282	E5.7	3.0	<.1	<20	346
08-17-99	19	4	110	<4.8	156	70	142	<.1	<60	1110
08-18-99	15	<1	8.7	<1.6	268	E9.7	13	<.1	<20	384
08-24-99	21	<1	5.9	<1.6	73	<10	E1.4	<.1	<20	88
08-19-99	15	<1	1.3	<1.6	<16	<10	<2.2	<.1	<20	82

QUALITY OF GROUND WATER--Continued

COOK COUNTY--Continued

DATE	SILICA, DIS- SOLVED (MG/L AS SI02) (00955)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	SOLIDS, SUM OF ZINC- DIS- SOLVED (UG/L AS ZN) (01090)	CONSTI- TUENTS, DIS- SOLVED (MG/301) (70301)
08-19-99	13	<1	4.8	<1.6	E11	380	138	<.1	<20	79
08-24-99	15	<1	15	<1.6	E14	21	<2.2	<.1	<20	138
08-24-99	15	<1	12	<1.6	<16	22	<2.2	<.1	<20	74
08-25-99	15	<1	16	<1.6	E12	61	24	<.1	<20	104
08-17-99	<.10	<1	E.58	<1.6	17	18	2.5	<.1	<20	--
08-24-99	23	3	30	<1.6	212	2900	103	<.1	248	497
08-18-99	.88	<1	59	<1.6	178	380	78	<.1	<20	380
08-17-99	17	<1	8.5	<1.6	E9.1	2500	64	<.1	<20	81

COTTONWOOD COUNTY

STATION NUMBER	DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE OF WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)
435145095051701	07-09-99	1000	571	588	7.5	7.5	13.0	725	.9
435211095063701	07-12-99	1630	940	946	7.1	7.2	11.7	731	3.6
435218095062801	07-08-99	1430	489	478	7.5	7.6	14.8	722	7.8
	09-01-99	1300	491	--	7.5	--	17.6	726	6.1
435239095074801	07-14-99	1030	668	683	7.5	7.5	16.1	724	1.7
435310095082501	07-08-99	1030	652	661	7.5	7.5	10.0	726	6.2
435320095094901	04-27-99	1600	723	--	7.6	--	9.2	724	.5
	07-06-99	1450	723	735	7.4	7.5	9.7	736	.0
	08-31-99	0900	730	--	7.6	--	101	728	--
435500095105701	07-13-99	0930	1020	1020	7.4	7.3	9.6	728	.7
435500095112401	07-13-99	1300	875	877	7.4	7.3	9.4	726	<.0
435515095093601	07-07-99	1430	2490	2480	7.2	7.1	12.3	731	.1
435748095122901	07-07-99	0930	714	722	7.4	7.4	10.7	732	2.6
	09-01-99	0930	726	--	7.4	--	13.0	727	1.2
435934095134701	07-13-99	1500	709	721	7.5	7.4	10.1	731	<.0

DATE	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
07-09-99	9	300	284	346	<.020	.032	--	.398	--	<.010
07-12-99	35	480	372	455	<.020	<.010	--	20.7	--	.019
07-08-99	82	270	253	309	<.020	<.010	--	.827	--	<.010
09-01-99	68	--	263	321	<.020	<.010	--	.655	--	<.010
07-14-99	18	370	346	423	.089	.010	--	2.65	--	<.010
07-08-99	57	350	240	293	<.020	<.010	--	3.88	--	<.010
04-27-99	5	--	423	517	<.020	<.010	2.1	.100	.235	.260
07-06-99	0	380	418	510	2.12	<.010	--	<.050	--	.243
08-31-99	--	--	389	475	1.94	<.010	--	<.050	--	.201
07-13-99	6	550	283	345	.022	<.010	--	2.43	--	.012
07-13-99	--	480	389	475	<.020	<.010	--	<.050	--	<.010
07-07-99	0	1700	383	467	3.64	.011	--	<.050	--	.045
07-07-99	24	370	280	341	.209	<.010	--	9.42	--	<.010
09-01-99	12	--	286	349	<.020	<.010	--	<.050	--	<.010
07-13-99	--	380	320	391	<.020	<.010	--	<.050	--	<.010

QUALITY OF GROUND WATER--Continued

COTTONWOOD COUNTY--Continued

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE, DIS-SOLVED (MG/L AS SO4) (00945)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)
07-09-99	73	29	4.7	.1	1.8	5.8	34	.42	321
07-12-99	130	40	14	.3	2.8	9.6	47	.13	555
07-08-99	71	22	2.9	.1	.85	.71	10	.24	262
09-01-99	--	--	--	--	--	.54	8.7	--	--
07-14-99	100	27	3.4	.1	2.0	1.5	24	.18	383
07-08-99	91	29	3.3	.1	1.3	14	69	.19	369
04-27-99	--	--	--	--	--	--	--	--	--
07-06-99	97	32	14	.3	2.0	.88	.88	.27	402
08-31-99	--	--	--	--	--	.80	.35	--	--
07-13-99	140	48	14	.3	1.7	24	240	.16	654
07-13-99	120	42	3.3	.1	4.9	20	80	<.10	508
07-07-99	390	172	61	.6	10	.42	1300	.22	2120
07-07-99	99	31	7.2	.2	1.9	11	66	.29	426
09-01-99	--	--	--	--	--	12	62	--	--
07-13-99	100	31	5.0	.1	1.6	11	68	.26	411

GOODHUE COUNTY

STATION NUMBER	DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STANDARD) (UNITS) (00400)	PH WATER WHOLE LAB (STANDARD) (UNITS) (00403)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN SATURATION (PERCENT) (00301)	HARDNESS TOTAL (MG/L AS CaCO3) (00900)
443829092411201	11-23-98	1600	439	457	8.0	8.0	12.2	748	9.5	91	200
443843092404301	11-22-98	1520	622	495	7.6	7.6	--	737	--	--	230
443852092420901	11-22-98	1055	590	601	7.4	7.6	12.0	737	7.4	71	300
443901092410001	11-22-98	1355	762	782	7.3	7.4	11.2	737	6.3	59	400
443905092420201	11-30-98	1520	422	435	7.7	7.7	11.5	747	8.7	82	220
443912092423501	11-19-98	1545	753	554	7.4	7.6	11.9	744	8.4	80	270
443914092422801	11-30-98	1125	545	556	7.4	7.4	10.7	747	8.7	80	280
443920092412701	11-22-98	1225	482	501	7.4	7.5	12.1	737	9.5	91	270
443920092412702	11-23-98	1330	427	448	7.8	8.0	11.3	748	5.1	48	210
443920092412703	11-23-98	1430	500	522	7.8	8.0	11.1	748	.2	2	260
443930092422601	11-30-98	1315	377	394	7.7	7.7	10.1	747	10.1	91	210
443941092421801	11-20-98	1135	232	248	8.1	8.1	8.3	749	.4	4	120
443944092421101	11-23-98	1140	466	486	7.7	7.9	12.3	748	9.2	87	240
	11-23-98	1144	466	--	7.7	--	12.3	748	9.2	87	--
443946092420201	11-20-98	1430	414	420	7.6	7.8	11.4	749	8.0	75	210
444003092425301	11-19-98	1345	332	251	8.1	8.1	10.2	743	9.8	89	120
444008092423201	11-20-98	1325	583	596	7.3	7.5	12.2	750	8.6	82	330
	11-20-98	1327	583	--	7.3	--	12.2	750	8.6	82	--
444026092433501	11-19-98	1200	677	500	7.4	7.6	11.3	745	>2.2	--	240

DATE	ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) (39086)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CaCO3) (90410)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00671)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)
11-23-98	110	118	134	.021	<.010	<.10	17.8	.043	.022	.023	55	17
11-22-98	206	225	251	.030	<.010	<.10	5.39	.051	.066	.050	70	15
11-22-98	210	221	257	<.020	<.010	.10	14.4	<.050	.010	.010	79	24
11-22-98	237	264	289	.020	<.010	.13	27.1	<.050	<.050	<.010	97	38
11-30-98	158	168	193	.033	<.010	<.10	9.90	.024	.012	.023	59	17
11-19-98	206	232	251	.026	<.010	<.10	12.4	.010	.010	.011	69	25
11-30-98	225	235	274	.027	<.010	<.10	4.27	.017	<.050	.018	78	21
11-22-98	202	226	246	.022	<.010	.16	7.45	<.050	.014	.013	69	23
11-23-98	174	180	212	<.020	<.010	.14	3.53	.033	.011	.014	53	20
11-23-98	245	286	299	.021	<.010	.25	<.050	.280	<.050	.010	62	25

QUALITY OF GROUND WATER--Continued

GOODHUE COUNTY--Continued

DATE	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3 (39086)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3 (00453)	NITRO-GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO-GEN, AMONIA + ORGANIC TOTAL SOLVED (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS-PHORUS TOTAL SOLVED (MG/L AS P) (00665)	PHOS-PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS- SOLVED (MG/L AS MG) (00925)
11-30-98	196	203	240	.028	<.010	<.10	.770	<.050	<.050	.012	51	19
11-20-98	92	108	112	<.020	<.010	<.10	2.24	.012	.019	.017	31	11
11-23-98	198	207	241	<.020	<.010	<.10	6.96	.025	.012	.013	57	24
11-23-98	198	--	241	--	--	--	--	--	--	--	--	--
11-20-98	164	171	200	<.020	<.010	<.10	5.42	.011	.013	.014	52	20
11-19-98	87	98	106	.023	.017	<.10	5.72	.016	.019	.020	29	10
11-20-98	253	287	309	<.020	<.010	<.10	5.51	<.050	<.050	<.010	81	31
11-20-98	253	--	309	--	--	--	--	--	--	--	--	--
11-19-98	190	211	232	.020	<.010	.10	3.13	<.050	<.050	.011	59	21

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
11-23-98	2.3	.1	1.1	16	18	<.10	20	18	4.9	315	274
11-22-98	11	.3	1.3	6.5	9.2	<.10	25	<10	E2.5	--	285
11-22-98	7.9	.2	.94	11	23	<.10	20	<10	<3.0	364	356
11-22-98	5.4	.1	1.2	18	21	<.10	17	<10	<3.0	464	460
11-30-98	2.2	.1	1.2	8.7	8.9	.14	25	E6.9	16	263	260
11-19-98	2.8	.1	.75	5.5	6.5	<.10	22	<10	<3.0	334	309
11-30-98	4.6	.1	1.5	21	12	<.10	21	<10	E2.1	340	312
11-22-98	3.1	.1	.89	2.8	10	<.10	21	<10	34	--	284
11-23-98	4.3	.1	.95	9.4	27	<.10	18	<10	<3.0	276	253
11-23-98	7.8	.2	1.4	11	8.7	<.10	18	260	258	313	282
11-30-98	2.0	.1	1.0	.60	6.9	.10	18	<10	4.7	227	220
11-20-98	2.1	.1	1.0	2.0	8.0	<.10	14	<10	<3.0	160	134
11-23-98	2.6	.1	1.2	5.2	16	<.10	22	<10	<3.0	296	277
11-20-98	4.7	.1	1.7	3.0	18	<.10	17	<10	<3.0	256	240
11-19-98	2.1	.1	.90	2.0	4.6	<.10	18	<10	E2.5	156	144
11-20-98	2.9	.1	1.0	2.5	14	<.10	19	<10	<3.0	356	327
11-19-98	9.1	.3	.75	12	25	<.10	16	<10	<3.0	296	271

HENNEPIN COUNTY

STATION NUMBER	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (90095)	PH WATER WHOLE FIELD (STAND-ARD) (UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD) (UNITS) (00403)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	BARO-METRIC PRES-SURE (MM OF HG) (00025)
450326093175201	06-29-99	1500	1380	1290	7.3	7.2	12.4	2.5	740
	06-29-99	1509	1380	1280	7.3	7.2	12.4	2.5	740
450430093220801	06-28-99	1500	905	887	7.1	7.3	10.5	--	736
	06-28-99	1509	905	889	7.1	7.3	10.5	--	736
450448093205301	06-29-99	1300	1660	1590	7.1	7.0	11.8	2.4	740
	06-29-99	1309	1660	1620	7.1	7.0	11.8	2.4	740

DATE	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	NITRO-GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO-GEN, AMONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	NITRO-GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS-PHORUS DIS- SOLVED (MG/L AS P) (00666)
06-29-99	1.4	14	400	279	340	.090	.019	.23	2.34	<.004
06-29-99	1.4	14	--	279	340	--	--	--	--	--
06-28-99	4.5	42	330	281	343	.023	<.010	E.10	2.40	.080
06-28-99	4.5	42	--	281	343	--	--	--	--	--
06-29-99	--	--	520	312	381	.037	.021	.31	2.96	<.004
06-29-99	--	--	--	312	381	--	--	--	--	--

QUALITY OF GROUND WATER--Continued

HENNEPIN COUNTY--Continued

DATE	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	SILICA, RIDE, DIS- SOLVED (MG/L AS F) (00950)	DIS- SOLVED (MG/L AS SIQ2) (00955)
06-29-99	<.010	110	30	112	2	4.9	190	81	.13	17
06-29-99	--	--	--	--	--	--	--	--	--	--
06-28-99	.061	99	21	60	1	1.6	100	18	.13	30
06-28-99	--	--	--	--	--	--	--	--	--	--
06-29-99	.013	140	41	106	2	3.5	280	60	.21	20
06-29-99	--	--	--	--	--	--	--	--	--	--

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
06-29-99	--	--	--	.075	--	--	--	--	520	--
06-29-99	<1	98	<1.0	--	<1.0	<1.0	1.1	1.8	--	<1.0
06-28-99	--	--	--	.075	--	--	--	--	<10	--
06-28-99	3	111	<1.0	--	<1.0	1.3	<1.0	1.6	--	<1.0
06-29-99	--	--	--	.082	--	--	--	--	<10	--
06-29-99	2	343	<1.0	--	<1.0	<1.0	4.9	4.1	--	<1.0

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
06-29-99	878	--	--	--	--	--	--	778	729
06-29-99	880	3.4	<1.0	1.2	<1.0	<1.0	1	--	--
06-28-99	<3.0	--	--	--	--	--	--	516	511
06-28-99	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	--	--
06-29-99	1370	--	--	--	--	--	--	974	859
06-29-99	444	20	<1.0	2.7	1.3	<1.0	2	--	--

JACKSON COUNTY

STATION NUMBER	DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	SPE- CIFIC CON- DUCT- ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND- ARD UNITS) (00403)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG (00025)
435008095060301	08-31-99	1400	626	--	7.4	--	16.1	729
435026095055601	07-14-99	1300	800	803	7.3	7.3	11.4	724

DATE	OXYGEN, DIS- SOLVED (MG/L AS P) (00300)	OXYGEN, (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
08-31-99	1.7	18	--	272	332	<.020	<.010	2.51	<.010
07-14-99	.1	1	440	329	402	.090	<.010	<.050	.018

JACKSON COUNTY--Continued

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
08-31-99	--	--	--	--	--	7.2	29	--	--
07-14-99	120	35	6.3	.1	.82	16	100	.27	474

OTTER TAIL COUNTY

STATION NUMBER	DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)
463305095382701	04-22-99	1030	615	7.8	9.4	728	4.5	41
	06-24-99	1420	627	7.5	10.2	724	4.6	43
	08-26-99	1500	609	7.6	11.8	721	4.4	43
463342095315701	04-22-99	1200	847	7.8	9.6	847	8.0	63
	06-25-99	0720	834	7.6	10.1	724	8.5	80
463632095370001	08-27-99	0740	836	7.8	11.6	725	8.6	83
	04-22-99	0930	505	7.8	9.0	728	9.8	88
	06-24-99	1300	606	7.5	11.2	724	10.3	99
463912095364701	08-26-99	1340	538	7.7	11.2	721	9.5	92
	04-21-99	1000	561	7.6	7.1	722	6.1	53
463912095364702	06-23-99	1530	715	7.2	12.1	720	<.1	--
	08-25-99	1520	640	7.3	14.4	724	--	--
	04-21-99	1130	534	7.6	8.6	723	--	--
	06-23-99	1630	546	7.4	11.7	720	--	--
	08-25-99	1600	532	7.5	11.3	724	--	--
463956095355601	04-21-99	1400	442	6.9	7.3	724	4.0	35
	06-24-99	0940	262	6.9	10.9	723	5.4	52
	08-26-99	0940	301	6.9	13.3	720	4.2	42
464113095341901	04-21-99	1540	689	7.4	10.4	723	.6	6
	06-24-99	0800	659	7.3	10.0	721	2.5	23
464154095375501	08-26-99	0830	639	7.5	10.5	719	2.3	22
	04-22-99	0730	1020	7.6	8.7	728	8.9	81
	06-24-99	1110	1050	7.4	10.9	724	9.4	90
	08-26-99	1110	1020	7.5	10.7	721	9.7	92

DATE	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
04-22-99	196	239	<.020	<.010	E.10	18.0	.030	.024
06-24-99	192	234	<.020	<.010	E.10	16.3	.031	.024
08-26-99	195	238	<.020	<.010	E.10	13.8	.032	.025
04-22-99	158	193	.021	<.010	.12	40.0	.012	.011
06-25-99	146	178	<.020	<.010	.13	40.2	.007	.012
08-27-99	144	176	<.020	<.010	.27	35.5	.007	<.010
04-22-99	227	277	<.020	<.010	E.10	10.2	.005	<.010
06-24-99	193	235	<.020	<.010	.12	17.3	.005	.012
08-26-99	190	232	<.020	<.010	E.10	12.7	.006	<.010
04-21-99	285	348	<.020	<.010	.11	.937	.042	.035
06-23-99	292	356	<.020	<.010	.28	7.17	.047	.041
08-25-99	260	318	<.020	<.010	.19	8.09	.041	.036
04-21-99	292	356	.481	<.010	.62	.072	.149	.010
06-23-99	291	355	.451	<.010	.63	<.050	.042	.101
08-25-99	293	357	.480	<.010	.65	<.050	.138	.043
04-21-99	95	348	<.020	<.010	.19	26.4	.109	.086
06-24-99	57	70	<.020	<.010	.14	12.2	.129	.105
08-26-99	49	59	<.020	<.010	.11	17.8	.126	.113
04-21-99	366	446	<.020	<.010	.27	.219	.013	.012
06-24-99	324	395	<.020	<.010	.30	.788	.014	.015
08-26-99	326	398	<.020	<.010	.32	.192	.013	<.010
04-22-99	193	236	<.020	<.010	.14	57.1	.009	.011
06-24-99	182	222	<.020	<.010	.22	54.7	.012	.011
08-26-99	203	248	<.020	<.010	.16	47.2	.011	<.010

