



US Army Corps
of Engineers
Baltimore District



Washington Aqueduct

U.S. ARMY Corps of Engineers

Annual Report of Water Analysis 2006

Prepared by:

Water Quality Laboratory
Plant Operations Branch
Washington Aqueduct
5900 MacArthur Boulevard, NW
Washington, D.C. 20016-2514

Approved by the Chief, Washington Aqueduct

A handwritten signature in black ink, dated May 9, 2007.

May 9, 2007





Potomac River Raw Water Supply

	Miscellaneous Physical Parameters									Inorganic Ions									Microorganisms							
	pH	ALKALINITY	CONDUCTIVITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	TEMPERATURE	TOTAL HARDNESS	TOTAL ORG. CARBON	TOTAL SOLIDS	TURBIDITY	TOTAL AMMONIA	BROMIDE	CHLORIDE	FLUORIDE	IODIDE	NITRATE	NITRITE	ORTHOPHOSPHATE as PO4	PERCHLORATE	SULFATE	ALGAE COUNT	TOTAL COLIFORM	E. COLI	GIARDIA	CRYPTOSPORIDIUM	VIRUS
	ppm	uS/cm	ppm	ppm	F	ppm	ppm	ppm	NTU	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppb	ppm	org/mL	MPN/100mL	MPN/100mL	cysts/L	oocysts/L	MPN/100L	
Jan	7.8	62	272	140	9	48	94	2.43	149	13	0.05	ND	20	0.11	3.4	2.40	ND	0.13	ND	26	299	28	6	ND	ND	14.2
Feb	7.9	69	292	202	3	48	98	2.07	205	10	ND	ND	31	0.10	-----	2.20	ND	0.12	ND	24	248	71	5	0.3	ND	-----
Mar	8.3	92	340	159	14	59	126	2.08	173	6	0.05	ND	28	0.11	-----	2.11	ND	0.13	ND	32	154	9	3	ND	ND	-----
Apr	7.7	83	317	184	3	68	123	2.83	187	6	ND	ND	27	0.11	3.1	1.50	0.03	0.18	ND	32	210	133	9	ND	ND	-----
May	7.6	73	269	170	3	69	98	2.39	173	4	ND	ND	18	0.10	-----	1.35	ND	0.12	ND	29	325	298	7	ND	ND	-----
Jun	7.4	81	281	164	2	78	111	3.74	166	15	ND	ND	20	0.12	-----	0.77	ND	0.11	ND	35	296	1905	382	ND	ND	0.9
Jul	8.0	100	317	196	4	82	127	2.86	200	5	ND	ND	18	0.12	4.6	1.58	ND	0.15	1.2	30	336	426	12	ND	ND	-----
Aug	7.8	109	365	218	7	84	140	2.66	225	3	ND	ND	25	0.14	-----	0.89	ND	0.13	ND	38	349	503	9	ND	ND	-----
Sep	8.1	105	354	222	2	73	138	3.15	224	3	ND	ND	24	0.13	-----	1.46	ND	0.15	ND	36	333	381	13	ND	ND	5.8
Oct	8.1	105	368	166	5	64	143	2.71	171	3	ND	ND	24	0.13	3.3	1.35	ND	0.16	ND	36	200	2018	89	ND	ND	-----
Nov	7.7	71	273	185	13	54	104	4.17	198	13	ND	ND	17	0.08	-----	1.82	ND	0.15	ND	25	192	179	10	ND	ND	65.1
Dec	7.9	99	317	185	3	59	125	1.99	188	4	ND	ND	22	0.09	-----	2.26	ND	0.18	1.0	27	96	548	17	ND	ND	-----
Avg	7.8	87	314	183	6	66	119	2.76	188	7	ND	ND	23	0.11	3.6	1.64	ND	0.14	ND	31	253	542	47	ND	ND	21.5
Max	8.3	109	368	222	14	84	143	4.17	225	15	0.05	ND	31	0.14	4.6	2.40	0.03	0.18	1.2	38	349	2018	382	0.3	ND	65.1
Min	7.4	62	269	140	2	48	94	1.99	149	3	ND	ND	17	0.08	3.1	0.77	ND	0.11	ND	24	96	9	3	ND	ND	0.9

	Metals																												
	ALUMINUM	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CALCIUM	CHROMIUM	COBALT	COPPER	IRON	LEAD	LITHIUM	MAGNESIUM	MANGANESE	MERCURY	MOLYBDENUM	NICKEL	POTASSIUM	SELENIUM	SILVER	SODIUM	STRONTIUM	THALLIUM	THORIUM	URANIUM	VANADIUM	ZINC	
	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Jan	538	ND	0.5	34.4	ND	ND	27	0.9	0.6	4.8	609	1.2	1.9	6	53	ND	ND	1.8	2.2	ND	ND	8.8	114	ND	ND	ND	ND	1.3	5.0
Feb	220	ND	ND	32.4	ND	ND	29	ND	ND	3.8	160	ND	1.7	6	56	ND	ND	1.4	-----	ND	ND	-----	127	ND	ND	ND	ND	0.5	3.2
Mar	155	ND	ND	30.1	ND	ND	37	1.1	ND	2.3	102	ND	1.7	8	34	ND	0.8	1.1	-----	ND	ND	-----	142	ND	ND	ND	ND	0.7	3.8
Apr	205	ND	0.6	40.1	ND	ND	36	ND	ND	3.7	185	ND	2.9	8	61	ND	1.4	1.5	2.3	0.6	ND	8.1	192	ND	ND	ND	ND	0.7	3.8
May	93	ND	0.6	36.5	ND	ND	30	ND	ND	3.5	106	ND	2.5	6	28	ND	0.7	0.9	-----	ND	ND	-----	147	ND	ND	ND	ND	0.8	2.1
Jun	143	ND	0.7	38.0	ND	ND	33	0.6	ND	3.2	58	ND	3.1	7	19	ND	1.2	0.9	-----	ND	ND	-----	173	ND	ND	ND	ND	1.2	1.3
Jul	153	ND	0.8	39.9	ND	ND	39	ND	ND	3.8	121	ND	2.0	7	68	ND	0.9	1.1	3.0	0.5	ND	13.0	167	ND	ND	ND	ND	1.5	1.5
Aug	510	ND	1.1	49.1	ND	ND	38	0.6	0.7	6.3	412	0.8	3.8	11	354	ND	1.4	1.9	-----	0.7	ND	-----	218	ND	ND	ND	ND	2.2	3.7
Sep	257	ND	1.0	44.3	ND	ND	39	ND	ND	4.8	77	ND	4.4	9	43	ND	2.2	2.0	-----	0.6	ND	-----	237	ND	ND	ND	ND	1.6	1.8
Oct	193	ND	0.8	40.8	ND	ND	41	ND	ND	3.7	61	1.5	2.6	10	25	ND	1.6	0.9	3.8	0.6	ND	15.0	222	ND	ND	ND	ND	1.2	1.8
Nov	267	ND	0.6	39.8	ND	ND	30	ND	ND	4.2	173	ND	2.4	7	69	ND	0.8	1.3	-----	ND	ND	-----	176	ND	ND	ND	ND	1.0	2.9
Dec	202	ND	ND	35.4	ND	ND	37	ND	ND	3.1	165	0.5	1.3	8	38	ND	0.6	1.0	-----	ND	ND	-----	140	ND	ND	ND	ND	0.6	2.8
Avg	245	ND	0.6	38.4	ND	ND	35	ND	ND	3.9	186	ND	2.5	8	71	ND	1.0	1.3	2.8	ND	ND	11.2	171	ND	ND	ND	ND	1.1	2.8
Max	538	ND	1.1	49.1	ND	ND	41	1.1	0.7	6.3	609	1.5	4.4	11	354	ND	2.2	2.0	3.8	0.7	ND	15.0	237	ND	ND	ND	ND	2.2	5.0
Min	93	ND	ND	30.1	ND	ND	27	ND	ND	2.3	58	ND	1.3	6	19	ND	ND	0.9	2.2	ND	ND	8.1	114	ND	ND	ND	ND	0.5	1.3

ppb = Parts Per Billion

ppm = Parts Per Million

ND = Not Detected

"-----" = No Analysis Required



Miscellaneous				
DIBROMOCHLOROPROPANE (DBCP)	ETHYLENE DIBROMIDE (EDB)	CYANIDE	DIOXIN	N-nitrosodimethylamine (NDMA)
0.2	50	0.2	30	

EPA

MCL*

Dalecarlia Water Treatment Plant Finished Water

	ppb	ppt	ppm	pg/L	ppt
Jan	----	----	ND	----	ND
Feb	----	----	----	----	----
Mar	ND	ND	----	ND	----
Apr	ND	ND	ND	ND	2.3
May	----	----	----	----	----
Jun	----	----	----	----	----
Jul	ND	ND	ND	ND	ND
Aug	----	----	----	----	----
Sep	----	----	----	----	----
Oct	ND	ND	----	ND	ND
Nov	----	----	ND	----	----
Dec	----	----	----	----	----
Avg	ND	ND	ND	ND	ND
Max	ND	ND	ND	ND	2.3
Min	ND	ND	ND	ND	ND

*EPA MCL = Environmental Protection Agency's Maximum Contaminant Level for regulated parameters.

ppb = Parts Per Billion

ppm = Parts Per Million

ppt = Parts Per Trillion

pCi/L = Picocuries per Liter

ND = Not Detected

NR = Not Reported

"----" = No Analysis Required

McMillan Water Treatment Plant Finished Water

Jan	----	----	ND	----	ND
Feb	----	----	----	----	----
Mar	ND	ND	----	ND	----
Apr	ND	ND	ND	ND	ND
May	----	----	----	----	----
Jun	----	----	----	----	----
Jul	ND	ND	ND	ND	ND
Aug	----	----	----	----	----
Sep	----	----	----	----	----
Oct	ND	ND	----	ND	ND
Nov	----	----	ND	----	----
Dec	----	----	----	----	----
Avg	ND	ND	ND	ND	ND
Max	ND	ND	ND	ND	ND
Min	ND	ND	ND	ND	ND