

COMPREHENSIVE CHEMICAL ANALYSIS
CITY OF CHICAGO - DEPARTMENT OF WATER MANAGEMENT - BUREAU OF WATER SUPPLY
WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES
 LABORATORY ACCREDITATION NUMBER: 100228

1st Quarter

Sample Date	3/3/2020	3/3/2020	3/3/2020	3/10/2020	3/3/2020	3/3/2020	3/3/2020	3/11/2020	3/11/2020
LAB ID Nos.	20C0892	20C0894	20C0895	20C0977- 20C0979	20C0888	20C0890	20C0891	20C0996- 20C0984	20C099- 20C1002

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT				
				1	2A	2B	3	4	5A	5B	5	7
				RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION	
					73rd Street	79th Street	SOUTH		North	Central	Central	North
TEMPERATURE ‡		°C	00010	3	2	3	6	3	3	3	9	10
TURBIDITY	TT	N.T.U.	82079	7.6	0.10	0.10	0.24	6.50	0.15	0.20	0.11	0.11
THRESHOLD ODOR, STRAIGHT ‡	*3	T.O.N	00086	1 E	1 Cc	1 Cc	1 Cc	1 E	1 Cc	1 Cc	1 Cc	1 Cc
THRESHOLD ODOR, DECHLORINATED ‡	*3	T.O.N.		1 E	1 M	1 Mm	1 M	1 E	1 Mm	1 M	1 M	1 Mm
COLOR (Apparent) ‡	*15	Pt.-Co. CU	00080	53	2	2	1	36	1	0	4	3
pH	*6.5-8.5	STD. Units	00040	8.2	7.8	7.8	7.9	8.2	7.8	7.8	7.9	7.9
FREE CHLORINE RESIDUAL ‡		CL ₂ , mg/L	50064	ND	1.52	1.50	1.25	ND	1.34	1.24	1.23	1.23
SATURATION INDEX, LANGELIER ‡		UNITS +/-		-0.10	-0.77	-0.71	-0.41	-0.20	-0.99	-0.97	-0.34	-0.31
ALKALINITY, PHENOLPHTHALEIN		0	00415	0	0	0	0	0	0	0	0	0
ALKALINITY, TOTAL		CaCO ₃ , mg/L	00410	108	100	101	101	108	98.6	100	101	101
CONDUCTIVITY		uS/cm		307	308	309	308	299	310	310	310	309
BROMIDE ‡		Br, mg/L	71870	<0.1	<0.1	<0.1	<0.10	<0.1	<0.1	<0.1	<0.10	<0.10
CHLORIDE	*250	Cl, mg/L	00940	15.0	17.5	17.4	16.4	17.4	19.5	19.6	16.8	16.6
FLUORIDE	4	F, mg/L	00951	0.851	0.769	R	0.745	0.712	0.698	0.694	0.699	0.701
SULFATE	*250	SO ₄ , mg/L	00945	22.9	27.1	26.8	27.8	22.3	27.6	28.3	28.4	28.2
HARDNESS		CaCO ₃ , mg/L	00900	144	142	142	136	144	142	134	137	136
CALCIUM		Ca, mg/L	00916	37.0	36.5	36.3	35.8	37.3	36.5	36.4	35.7	35.2
MAGNESIUM ‡		Mg, mg/L	00927	12.7	12.6	12.5	12.3	12.7	12.6	12.6	12.2	12.0
POTASSIUM ‡		K, mg/L	00937	1.30	1.41	1.39	1.33	1.31	1.40	1.39	1.29	1.27
SODIUM ‡		Na, mg/L	00006	8.99	9.42	9.46	9.40	8.91	9.74	9.68	9.57	9.16
SOLIDS, TOTAL DISSOLVED *	*500	TDS, mg/L	00150	172	161	155	137	159	154	167	147	141
SOLIDS, TOTAL *		Tot. Sol., mg/L	00500	185	164	172	158	161	160	173	158	162
TOTAL ORGANIC CARBON		TOC, mg/L	00680	1.69	1.47	1.46	1.47	2.01	1.52	1.53	1.48	1.41
OXYGEN DEMAND, CHEMICAL ‡		O, mg/L	00335	6.15	4.56	6.29	6.35	4.22	4.51	3.25	6.12	5.90
NITROGEN, AMMONIA ‡		N, mg/L	00610	<0.1	<0.1	<0.1	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1
NITROGEN, NITRATE ‡ *	10	N, mg/L	00620	0.362	0.367	0.365	0.347	0.380	0.384	0.385	0.342	0.338
NITROGEN, NITRITE	1	N, mg/L	00615	<0.1	<0.1	<0.1	<0.10	<0.1	<0.1	<0.1	<0.1	<0.1
ORTHOPHOSPHATE		PO ₄ , mg/L	00660	<0.06	0.630	0.624	0.651	<0.06	0.524	0.522	0.548	0.594
PHOSPHATE, TOTAL		PO ₄ , mg/L	00650	<0.06	1.24	1.40	1.30	<0.06	1.13	1.15	1.13	1.21
CYANIDE, TOTAL	200	CN, ug/L	00720	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

R - Data rejected

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1st Quarter

Sample Date	3/3/2020	3/3/2020	3/3/2020	3/10/2020	3/3/2020	3/3/2020	3/3/2020	3/11/2020	3/11/2020
LAB ID Nos.	20C0892	20C0894	20C0895	20C0977- 20C0979	20C0888	20C0890	20C0891	20C0996- 20C0984	20C099- 20C1002

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT				
				1	2A	2B	3	4	5A	5B	6	7
				RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION	
					73rd Street	79th Street	SOUTH		North	Central	Central	North
ALUMINUM	*50-200	Al, µg/L	01105	144	28.8	31.9	30.0	159	38.7	40.9	32.4	36.0
ANTIMONY	6	Sb, µg/L	01268	<1	<1	<1	<1	<1	<1	<1	<1	<1
ARSENIC	10	As, µg/L	01002	1.16	<1	<1	<1	1.02	<1	<1	<1	<1
BARIUM	2000	Ba, µg/L	01007	20.4	18.5	18.7	18.4	20.0	18.6	18.8	18.7	18.8
BERYLLIUM	4	Be, µg/L	01012	<1	<1	<1	<1	<1	<1	<1	<1	<1
BORON ‡		B, µg/L	01022	23.1	22.6	22.3	22.6	22.7	23.2	22.7	22.4	22.5
CADMIUM	5	Cd, µg/L	01027	<1	<1	<1	<1	<1	<1	<1	<1	<1
CHROMIUM	100	Cr, µg/L	01034	<1	1.24	1.20	1.58	<1	<1	1.22	<1	<1
COBALT #		Co, µg/L	01037	<1	<1	<1	<1	<1	<1	<1	<1	<1
COPPER	**1300	Cu, µg/L	01042	2.24	<1	<1	1.11	<1	<1	<1	<1	2.53
IRON	*300	Fe, µg/L	00031	1.31	<1	<1	8.93	194	<1	<1	5.59	13.1
LEAD	**15.0	Pb, µg/L	01051	<1	<1	<1	<1	<1	<1	<1	<1	<1
LITHIUM ‡		Li, µg/L	01132	1.53	2.63	2.74	2.06	<1	2.75	2.27	2.04	2.05
MANGANESE	*50	Mn, µg/L	01055	3.21	<1	<1	<1	3.08	<1	<1	<1	1.28
MERCURY	2	Hg, µg/L	71900	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
MOLYBDENUM		Mo, µg/L	01062	<1	<1	<1	1.12	<1	<1	<1	<1	<1
NICKEL		Ni, µg/L	01067	2.52	1.47	1.50	1.55	2.46	1.44	1.42	1.58	1.57
SELENIUM	50	Se, µg/L	01147	<1	<1	<1	<1	<1	<1	<1	<1	1.00
SILICON		Si, µg/L	01142	1555	1470	1441	1417	1494	1424	1418	1386	1365
SILVER	*100	Ag, µg/L	01077	<1	<1	<1	<1	<1	<1	<1	<1	<1
STRONTIUM ‡		Sr, µg/L	01082	113	119	119	119	111	118	119	118	119
THALLIUM	2	Tl, µg/L	01059	<1	<1	<1	<1	<1	<1	<1	<1	<1
TITANIUM ‡		Ti, µg/L	01152	4.84	1.61	1.74	1.67	4.71	1.44	1.45	1.45	1.50
VANADIUM ‡		V, µg/L	00985	<1	<1	<1	<1	<1	<1	<1	<1	<1
ZINC	*5000	Zn, µg/L	01092	6.33	<1	<1	10.3	13.6	<1	<1	22.0	23.0

* Federal Primary/Secondary MCLs

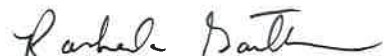
** Action Level

TT - Treatment Technique

ND - not detected

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 CHIEF WATER CHEMIST


 DIRECTOR OF LABORATORIES


 DEPUTY COMMISSIONER

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2nd Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date				LAB ID Nos.				
				5/11/2020	5/11/2020	5/11/2020	5/13/2020	5/11/2020	5/11/2020	5/11/2020	5/12/2020	5/12/2020
				20C1893	20C1895	20C1896	20C1934 - 20C1935	20C1877	20C1879	20C1880	20C1922 - 20C1924, 20C1940-20C1941	20C1919 - 20C1921
				SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT				
				1	2A	2B	3	4	5A	5B	6	7
				RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION	
					73rd Street	79th Street	SOUTH		North	Central	Central	North
TEMPERATURE ‡		°C	00010	11	10	11	7	9	11	12	9	12
TURBIDITY	TT	N.T.U.	82079	4.4	0.15	0.05	0.10	6.2	0.05	0.05	0.08	0.14
THRESHOLD ODOR, STRAIGHT ‡	*3	T.O.N	00086	1 E	1 Mm	2 Mm	1 Cc	1 E	1 Mm	1 Mm	1 Cc	1 Cc
THRESHOLD ODOR, DECHLORINATED ‡	*3	T.O.N.		1 E	1 Mm	2 Mm	1 M	1 E	1 Mm	1 Mm	1 M	1 M
COLOR (Apparent) ‡	*15	Pt.-Co. ACU	00080	33	<15	<15	<15	56	<15	<15	<15	<15
pH	*6.5-8.5	STD. Units	00040	8.0	7.7	7.7	7.7	8.0	7.6	7.6	7.7	7.8
FREE CHLORINE RESIDUAL ‡		CL ₂ , mg/L	50064	---	1.58	1.53	1.02	--	1.59	1.58	1.43	1.24
SATURATION INDEX, LANGELIER ‡		UNITS +/-		-0.41	-0.67	-0.62	-0.58	0.02	-0.67	-0.67	-0.52	-0.43
ALKALINITY, PHENOLPHTHALEIN		0	00415	0	0	0	0	0	0	0	0	0
ALKALINITY, TOTAL		CaCO ₃ , mg/L	00410	112	102	103	103	109	102	102	103	102
CONDUCTIVITY		uS/cm		324	321	323	327	309	318	318	314	315
BROMIDE ‡		Br, mg/L	71870	<0.10	<0.10	<0.10	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10
CHLORIDE	*250	Cl, mg/L	00940	17.5	18.8	18.5	20.4	15.2	18.0	17.9	18.5	17.9
FLUORIDE	4	F, mg/L	00951	0.11	0.75	0.74	0.76	0.11	0.75	0.75	0.77	0.83
SULFATE	*250	SO ₄ , mg/L	00945	22.4	27.4	27.1	27.3	22.2	26.1	25.7	25.8	26.0
HARDNESS		CaCO ₃ , mg/L	00900	139	138	139	141	143	135	138	137	136
CALCIUM		Ca, mg/L	00916	36.3	34.3	34.3	34.6	35.7	33.9	33.8	34.1	33.9
MAGNESIUM ‡		Mg, mg/L	00927	12.6	12.4	12.4	12.5	12.4	12.2	12.2	12.3	12.2
POTASSIUM ‡		K, mg/L	00937	1.44	1.18	1.18	1.21	1.40	1.19	1.20	1.20	1.21
SODIUM ‡		Na, mg/L	00006	10.7	9.95	9.96	10.9	9.20	9.60	9.54	10.0	9.90
SOLIDS, TOTAL DISSOLVED	*500	TDS, mg/L	00150	157	169	164	176	165	170	166	161	160
SOLIDS, TOTAL		Tot. Sol., mg/L	00500	189	186	183	194	187	183	179	186	183
TOTAL ORGANIC CARBON		TOC, mg/L	00680	1.99	1.64	1.63	1.63	1.92	1.66	1.70	1.65	1.63
OXYGEN DEMAND, CHEMICAL ‡		O, mg/L	00335	7.02	5.07	4.79	4.75	5.54	4.39	4.75	4.76	4.80
NITROGEN, AMMONIA ‡		N, mg/L	00610	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
NITROGEN, NITRATE ‡	10	N, mg/L	00620	0.403	0.364	0.362	0.394	0.344	0.355	0.353	0.354	0.339
NITROGEN, NITRITE	1	N, mg/L	00615	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
ORTHOPHOSPHATE		PO ₄ , mg/L	00660	<0.06	0.672	0.595	0.683	<0.06	0.594	0.599	0.569	0.587
PHOSPHATE, TOTAL		PO ₄ , mg/L	00650	<0.06	1.52	1.46	1.32	<0.06	1.28	1.25	1.24	1.24
CYANIDE, TOTAL	200	CN, ug/L	00720	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

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2nd Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date	5/11/2020	5/11/2020	5/11/2020	5/13/2020	5/11/2020	5/11/2020	5/11/2020	5/12/2020	5/12/2020		
				LAB ID Nos.	20C1893	20C1895	20C1896	20C1934 - 20C1935	20C1877	20C1879	20C1880	20C1922 - 20C1924, 20C1940-20C1941	20C1919 - 20C1921		
				SOUTH WATER PURIFICATION PLANT				JARDINE WATER PURIFICATION PLANT							
				1	2A	2B	3	4	5A	5B	6	7			
RAW LAKE	OUTLETS		***DISTRIBUTION	RAW LAKE	OUTLETS		***DISTRIBUTION								
	73rd Street	79th Street	SOUTH		North	Central	Central	North							
ALUMINUM	*50-200	Al, µg/L	01105	69.4	35.0	38.0	32.7	72.0	50.0	54.7	49.1	43.2			
ANTIMONY	6	Sb, µg/L	01268	<1	<1	<1	<1	<1	<1	<1	<1	<1			
ARSENIC	10	As, µg/L	01002	R	<3	<3	<3	R	<3	<3	<3	<3			
BARIUM	2000	Ba, µg/L	01007	21.6	20.4	20.3	21.0	21.8	20.4	20.5	21.0	20.5			
BERYLLIUM	4	Be, µg/L	01012	<1	<1	<1	<1	<1	<1	<1	<1	<1			
BORON ‡		B, µg/L	01022	25.0	25.1	25.0	26.0	24.4	25.2	25	25.7	25.8			
CADMIUM	5	Cd, µg/L	01027	<1	<1	<1	<1	<1	<1	<1	<1	<1			
CHROMIUM	100	Cr, µg/L	01034	1.20	3.12	3.12	2.70	1.15	3.08	3.06	2.95	3.20			
COBALT ‡		Co, µg/L	01037	<1	<1	<1	<1	<1	<1	<1	<1	<1			
COPPER	**1300	Cu, µg/L	01042	4.80	<1	<1	2.98	1.08	<1	<1	<1	<1			
IRON	*300	Fe, µg/L	00031	106	<1	2.55	13.2	140	<1	<1	4.67	13.2			
LEAD	**15.0	Pb, µg/L	01051	<1	<1	<1	<1	<1	<1	<1	<1	<1			
LITHIUM ‡		Li, µg/L	01132	1.46	1.82	2.30	2.81	1.32	2.21	2.82	3.17	3.36			
MANGANESE	*50	Mn, µg/L	01055	2.27	<1	<1	<1	2.81	<1	<1	<1	<1			
MERCURY	2	Hg, µg/L	71900	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S			
MOLYBDENUM		Mo, µg/L	01062	1.01	<1	<1	<1	<1	<1	<1	<1	<1			
NICKEL		Ni, µg/L	01067	2.18	1.44	1.47	1.74	2.58	2.50	1.44	1.54	1.52			
SELENIUM	50	Se, µg/L	01147	<1	<1	<1	<1	<1	<1	<1	<1	<1			
SILICON		Si, µg/L	01142	1373	1277	1398	1376	1294	1294	1294	1407	1483			
SILVER	*100	Ag, µg/L	01077	<1	<1	<1	<1	<1	<1	<1	<1	<1			
STRONTIUM ‡		Sr, µg/L	01082	125	119	120	125	123	119	118	121	120			
THALLIUM	2	Tl, µg/L	01059	<1	<1	<1	<1	<1	<1	<1	<1	<1			
TITANIUM ‡		Ti, µg/L	01152	2.17	1.85	1.83	1.79	2.52	1.59	1.57	1.58	1.59			
VANADIUM ‡		V, µg/L	00985	R	1.02	1.03	<1	R	1.01	1.01	1.02	1.04			
ZINC	*5000	Zn, µg/L	01092	<1	<1	1.18	31.1	<1	<1	<1	21.4	18.9			

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LFMs did not meet Criteria for Si (Site Nos. 1 & 4)

Rashel Barth

CHIEF WATER CHEMIST

Harvey S. Sch

DIRECTOR OF LABORATORIES

Andrea H. Cheng

DEPUTY COMMISSIONER