

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

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date				LAB ID Nos.				
				2/25/2019	2/25/2019	2/25/2019	2/27/2019	2/25/2019	2/25/2019	2/25/2019	2/26/19 2/27/2019	2/26/2019
				19C1693	19C1694	19C1695	19C1783- 19C1788	19C1672	19C1673	19C1674	19C1721-23 19C1789-90	19C1716- 19C1720
				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	4	3	3	7	2	2	3	5	8
TURBIDITY	TT	N.T.U.	82079	0.70	0.10	0.10	0.15	0.90	0.10	0.10	0.20	0.20
THRESHOLD ODOR, STRAIGHT	*3	T.O.N	00086	1 M	2 Cc	2 Cc	1 Cc	1 M	2 Cc	1 Cc	1 Cc	1 Cc
THRESHOLD ODOR, DECHLORINATED	*3	T.O.N.		1 M	1 M	1 M	1 M	1 M	1 M	1 M	1 M	1 M
COLOR	*15	Pt.-Co. CU	00080	9	1	0	1	6	2	1	1	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	7.8
FREE CHLORINE RESIDUAL		CL ₂ , mg/L	50064	ND	1.27	1.31	0.88	ND	1.22	1.13	0.99	0.85
SATURATION INDEX, LANGELIER		UNITS +/-		-0.14	-0.54	-0.53	-0.36	-0.23	-0.52	-0.52	-0.34	-0.35
ALKALINITY, PHENOLPHTHALEIN		0	00415	0	0	0	0	0	0	0	0	0
ALKALINITY, TOTAL		CaCO ₃ , mg/L	00410	118	115	117	111	114	108	110	115	110
CONDUCTIVITY		uS/cm		306	320	319	320	310	318	319	321	317
BROMIDE		Br, mg/L	71870	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
CHLORIDE	*250	Cl, mg/L	00940	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
FLUORIDE	4	F, mg/L	00951	0.115	0.724	0.720	0.706	0.118	0.733	0.742	0.732	0.740
SULFATE	*250	SO ₄ , mg/L	00945	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
HARDNESS		CaCO ₃ , mg/L	00900	144	146	140	145	143	146	145	147	144
CALCIUM		Ca, mg/L	00916	35.1	35.1	35.1	35.8	35.4	35.9	36.5	35.8	35.5
MAGNESIUM		Mg, mg/L	00927	12.4	12.5	12.4	12.7	12.6	12.7	12.9	12.7	12.6
POTASSIUM		K, mg/L	00937	1.29	1.31	1.32	1.34	1.31	1.40	1.43	1.36	1.34
SODIUM		Na, mg/L	00006	8.55	9.33	9.40	9.47	9.22	10.2	10.4	10.3	9.97
SOLIDS, TOTAL DISSOLVED	*500	TDS, mg/L	00150	141	138	105	150	157	152	142	125	138
SOLIDS, TOTAL		Tot. Sol., mg/L	00500	196	161	173	175	209	182	209	180	171
TOTAL ORGANIC CARBON		TOC, mg/L	00680	1.77	1.50	1.49	1.52	1.74	1.50	1.50	1.56	1.48
OXYGEN DEMAND, CHEMICAL		O, mg/L	00335	6.8	5.3	4.4	5.7	6.0	4.8	4.9	4.0	5.6
NITROGEN, AMMONIA		N, mg/L	00610	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
NITROGEN, NITRATE	10	N, mg/L	00620	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
NITROGEN, NITRITE	1	N, mg/L	00615	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S	O/S
ORTHOPHOSPHATE		PO ₄ , mg/L	00660	0.060	0.695	0.591	0.636	0.060	0.530	0.541	0.541	0.539
PHOSPHATE, TOTAL		PO ₄ , mg/L	00650	0.019	1.35	1.22	1.22	0.018	1.17	1.19	1.18	1.15
CYANIDE, TOTAL***	200	CN, ug/L	00720	<12	<12	<12	<12	<12	<12	<12	<12	<12

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

O/S - Instrument out of Service

R - Data rejected

***Cyanide - LFM Did not meet QC Criteria

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1st Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date	2/25/2019	2/25/2019	2/25/2019	2/27/2019	2/25/2019	2/25/2019	2/25/2019	2/26/19 2/27/2019	2/26/2019		
				LAB ID Nos.	19C1693	19C1694	19C1695	19C1783- 19C1788	19C1672	19C1673	19C1674	19C1721-23 19C1789-90	19C1716- 19C1720		
				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	137	320	65.1	31.3	32.4	52.0	52.7	47.6	44.4			
ANTIMONY	6	Sb, µg/L	01268	<1	<1	<1	<1	<1	<1	<1	<1	<1			
ARSENIC	10	As, µg/L	01002	<1	<1	<1	<1	<1	<1	<1	<1	<1			
BARIUM	2000	Ba, µg/L	01007	20.3	20.3	19.7	18.8	20.4	20.0	19.6	19.3	18.9			
BERYLLIUM	4	Be, µg/L	01012	<1	<1	<1	<1	<1	<1	<1	<1	<1			
BORON		B, µg/L	01022	28.7	37.9	26.4	25.2	24.7	25.1	24.7	24.9	24.6			
CADMIUM	5	Cd, µg/L	01027	<1	<1	<1	<1	<1	<1	<1	<1	<1			
CHROMIUM	100	Cr, µg/L	01034	1.16	1.12	1.10	1.05	1.02	<1	1.25	1.00	<1			
COBALT		Co, µg/L	01037	<1	<1	<1	<1	<1	<1	<1	<1	<1			
COPPER	**1300	Cu, µg/L	01042	2.35	1.23	<1	2.69	<1	<1	<1	1.18	2.90			
IRON	*300	Fe, µg/L	00031	23.3	12.4	1.97	7.17	18.4	<1	<1	7.62	12.9			
LEAD	**15.0	Pb, µg/L	01051	<1	<1	<1	1.22	<1	<1	<1	2.59	<1			
LITHIUM ***		Li, µg/L	01132	2.96	3.13	2.95	3.00	2.91	2.92	2.92	2.95	2.92			
MANGANESE	*50	Mn, µg/L	01055	<1	<1	<1	<1	<1	<1	<1	<1	1.60			
MERCURY	2	Hg, µg/L	71900	<0.5	<0.5	<0.5	0.178	<0.5	<0.5	<0.5	0.505	<0.5			
MOLYBDENUM		Mo, µg/L	01062	<1	1.02	1.02	1.01	1.00	1.00	1.00	1.02	<1			
NICKEL		Ni, µg/L	01067	<1	<1	<1	<1	<1	<1	<1	<1	<1			
SELENIUM	50	Se, µg/L	01147	<1	<1	<1	<1	<1	<1	<1	<1	<1			
SILICON		Si, µg/L	01142	1212	1339	1354	1375	1253	1380	1368	1358	1361			
SILVER	*100	Ag, µg/L	01077	<1	<1	<1	<1	<1	<1	<1	<1	<1			
STRONTIUM		Sr, µg/L	01082	124	128	126	127	128	126	126	128	126			
THALLIUM	2	Tl, µg/L	01059	<1	<1	<1	<1	<1	<1	<1	<1	<1			
TITANIUM		Ti, µg/L	01152	1.13	2.23	1.93	1.47	1.19	1.86	1.94	1.41	1.35			
VANADIUM		V, µg/L	00985	<1	<1	<1	<1	<1	<1	<1	<1	<1			
ZINC	*5000	Zn, µg/L	01092	30.4	82.1	8.93	9.09	<1	<1	<1	21.0	31.4			

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

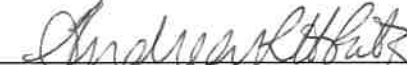
***Lithium - LFM did not meet QC Criteria



CHIEF WATER CHEMIST



DIRECTOR OF LABORATORIES



DEPUTY COMMISSIONER

MANAGER OF WATER QUALITY

COMPREHENSIVE CHEMICAL ANALYSIS
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WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES
 LABORATORY ACCREDITATION NUMBER: 100228

2nd Quarter

Sample Date	6/3/2019	6/3/2019	6/3/2019	6/5/19-6/6/19	6/3/2019	6/3/2019	6/3/2019	6/5/19-6/6/19	6/5/2019
LAB ID Nos.	19C5031	19C5033	19C5034	19C5197-5199 19C5264-5266	19C5027	19C5029	19C5030	19C5194-5196 19C5200-5267	19C5189- 19C5193

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 SOUTH	RAW LAKE	OUTLETS		***DISTRIBUTION	
					73rd Street	79th Street			North	Central	Central	North
TEMPERATURE ‡		°C	00010	10	11	12	17	9	9	10	16	16
TURBIDITY	TT	N.T.U.	82079	0.45	0.05	0.05	0.16	0.65	0.05	0.05	0.10	0.11
THRESHOLD ODOR, STRAIGHT ‡	*3	T.O.N	00086	1 M	1 Cc	1 Cc	1 Cc	1 M	1 Cc	1 Cc	1 Cc	1 Cc
THRESHOLD ODOR, DECHLORINATED ‡	*3	T.O.N.		1 M	1 M	1 M	1 M	1 M	1 M	1 M	1 M	1 M
COLOR (Apparent) ‡	*15	Pt.-Co. ACU	00080	4	2	0	1	6	2	1	1	1
pH	*6.5-8.5	STD. Units	00040	8.3	7.9	7.9	8.0	8.3	7.9	7.9	8.0	7.9
FREE CHLORINE RESIDUAL ‡		CL ₂ , mg/L	50064	ND	1.25	1.31	0.81	ND	1.12	1.13	0.86	0.83
SATURATION INDEX, LANGELIER ‡		UNITS +/-		0.20	-0.55	-0.55	-0.06	0.26	-0.54	-0.49	-0.10	-0.14
ALKALINITY, PHENOLPHTHALEIN		0	00415	1	0	0	0	1	0	0	0	0
ALKALINITY, TOTAL		CaCO ₃ , mg/L	00410	107	101	101	101	106	101	101	100	100
CONDUCTIVITY		uS/cm		306	310	310	308	303	310	311	306	307
BROMIDE ‡		Br, mg/L	71870	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CHLORIDE	*250	Cl, mg/L	00940	16.1	17.7	17.7	17.7	15.7	17.4	17.4	17.1	17.4
FLUORIDE	4	F, mg/L	00951	<0.5	0.79	0.78	0.77	<0.5	0.71	0.71	0.72	0.72
SULFATE	*250	SO ₄ , mg/L	00945	21.8	24.5	24.6	24.4	21.8	25.4	25.2	24.7	24.6
HARDNESS		CaCO ₃ , mg/L	00900	137	135	138	138	139	135	136	135	135
CALCIUM		Ca, mg/L	00916	34.8	35.2	35.4	36.2	35.4	35.7	35.2	35.8	35.9
MAGNESIUM ‡		Mg, mg/L	00927	12.5	12.6	12.7	12.9	12.8	12.9	12.7	12.9	12.9
POTASSIUM ‡		K, mg/L	00937	1.29	1.35	1.35	1.40	1.32	1.37	1.35	1.36	1.37
SODIUM ‡		Na, mg/L	00006	10.0	10.6	10.6	10.9	10.0	10.6	10.4	10.4	10.5
SOLIDS, TOTAL DISSOLVED	*500	TDS, mg/L	00150	168	172	174	154	163	172	170	147	163
SOLIDS, TOTAL		Tot. Sol., mg/L	00500	180	184	186	179	172	185	181	179	183
TOTAL ORGANIC CARBON		TOC, mg/L	00680	1.76	1.70	1.69	1.64	1.84	1.65	1.64	1.60	1.71
OXYGEN DEMAND, CHEMICAL ‡		O, mg/L	00335	6.86	5.93	6.57	9.42	6.36	5.72	6.49	7.20	6.75
NITROGEN, AMMONIA ‡		N, mg/L	00610	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
NITROGEN, NITRATE ‡	10	N, mg/L	00620	0.300	0.291	0.292	0.287	0.285	0.284	0.285	0.279	0.285
NITROGEN, NITRITE	1	N, mg/L	00615	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
ORTHOPHOSPHATE		PO ₄ , mg/L	00660	<0.06	0.741	0.527	0.639	<0.06	0.496	0.518	0.557	0.552
PHOSPHATE, TOTAL		PO ₄ , mg/L	00650	<0.06	1.32	1.05	1.16	<0.06	1.12	1.12	1.11	1.11
CYANIDE, TOTAL	200	CN, ug/L	00720	<12	<12	<12	<12	<12	<12	<12	<12	<12

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

Distribution samples results are averages

H - Holding Time Exceeded

R - Data rejected

‡ - Non-NELAP Accredited

Dist. Central Samples for Cyanide did not meet LFM QC criteria

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WATER QUALITY DIVISION-WATER PURIFICATION LABORATORIES

LABORATORY ACCREDITATION NUMBER: 100228

2nd Quarter

PARAMETER	IEPA MCL	DETERMINED AS	STORET NUMBER	Sample Date	6/3/2019	6/3/2019	6/3/2019	6/5/19-6/6/19	6/3/2019	6/3/2019	6/3/2019	6/5/19-6/6/19	6/5/2019		
				LAB ID Nos.	19C5031	19C5033	19C5034	19C5197-5199 19C5264-5266	19C5027	19C5029	19C5030	19C5194-5196 19C5200-5267	19C5189- 19C5193		
				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	17.5	86.0	88.9	78.5	21.6	100	103	83.1	77.9			
ANTIMONY	6	Sb, µg/L	01268	<1	<1	<1	<1	<1	<1	<1	<1	<1			
ARSENIC	10	As, µg/L	01002	<1	<1	<1	<1	<1	<1	<1	<1	<1			
BARIUM	2000	Ba, µg/L	01007	20.0	19.7	20.1	20.5	20.3	20.3	20.4	20.4	20.3			
BERYLLIUM	4	Be, µg/L	01012	<1	<1	<1	<1	<1	<1	<1	<1	<1			
BORON ‡		B, µg/L	01022	23.4	24.2	24.2	24.9	23.9	24.2	24.3	24.3	24.3			
CADMIUM	5	Cd, µg/L	01027	<1	<1	<1	<1	<1	<1	<1	<1	<1			
CHROMIUM	100	Cr, µg/L	01034	1.27	1.20	1.01	<1	<1	1.24	1.29	<1	1.15			
COBALT ‡		Co, µg/L	01037	<1	<1	<1	<1	<1	<1	<1	<1	<1			
COPPER	**1300	Cu, µg/L	01042	1.17	<1	<1	<1	<1	<1	6.83	<1	1.05			
IRON	*300	Fe, µg/L	00031	7.50	<1	<1	8.58	12.5	<1	<1	8.71	14.6			
LEAD	**15.0	Pb, µg/L	01051	<1	<1	<1	<1	<1	<1	<1	<1	<1			
LITHIUM ‡		Li, µg/L	01132	<1	1.08	2.03	2.36	2.29	2.00	<1	1.49	2.43			
MANGANESE	*50	Mn, µg/L	01055	<1	<1	<1	<1	<1	<1	<1	<1	<1			
MERCURY	2	Hg, µg/L	71900	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			
MOLYBDENUM		Mo, µg/L	01062	1.01	<1	1.01	<1	1.03	1.01	1.00	<1	<1			
NICKEL		Ni, µg/L	01067	<1	<1	<1	<1	<1	<1	<1	<1	<1			
SELENIUM	50	Se, µg/L	01147	<1	<1	<1	<1	<1	<1	<1	<1	<1			
SILICON		Si, µg/L	01142	765	948	930	917	725	882	881	874	864			
SILVER	*100	Ag, µg/L	01077	<1	<1	<1	<1	<1	<1	<1	<1	<1			
STRONTIUM ‡		Sr, µg/L	01082	116	116	118	118	115	116	116	116	116			
THALLIUM	2	Tl, µg/L	01059	<1	<1	<1	<1	<1	<1	<1	<1	<1			
TITANIUM ‡		Ti, µg/L	01152	<1	1.46	1.19	1.29	<1	1.22	1.24	1.20	1.18			
VANADIUM ‡		V, µg/L	00985	<1	<1	<1	<1	<1	<1	<1	<1	<1			
ZINC	*5000	Zn, µg/L	01092	<1	<1	<1	6.58	<1	<1	<1	24.6	17.3			

* Federal Primary/Secondary MCLs

** Action Level

TT - Treatment Technique

ND - not detected

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‡ - Non-NELAP Accredited

Paul J. Dault
CHIEF WATER CHEMIST

Harvee Salish
DIRECTOR OF LABORATORIES

MANAGER OF WATER QUALITY

Andrew R. Prof
DEPUTY COMMISSIONER