

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Southwest Plant
March 12th, 2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	2.00	0.04	0.3/95% (1)		
Total Solids		mg/L	136	135		500	10
Total Dissolved Solids		mg/L	148	159		500	10
Aluminum	Al	mg/L	1.656	2.039		0.05-0.2	0.005
Iron	Fe	mg/L	0.170	0.494		0.3	0.005
Copper	Cu	mg/L	0.056	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	8.60	8.51			0.5
Calcium	Ca	mg/L	36.4	35.1			0.1
Sodium	Na	mg/L	7.05	7.45		20 (2)	0.1
Potassium	K	mg/L	1.14	1.09			0.1
Manganese	Mn	mg/L	< 0.002	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	0.6	0.9			0.4
Sulfate	SO ₄ ²⁻	mg/L	21.7	25.5			
Chloride	Cl ⁻	mg/L	12.0	13.5		250	5
Phosphorus	P	mg/L	< 0.05	0.35			0.05
Free Carbon Dioxide	CO ₂	mg/L	2.0	4.6			
Total Hardness (3), (4), (5)		mg/L	112	120			
Total Alkalinity (3)		mg/L	81	74			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	81	74			
Non-Carbonate Hardness (3)		mg/L	31	46			
Chemical Oxygen Demand		mg/L	3.2	< 2.0			2
Dissolved Oxygen		mg/L	18.7	21.5			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	0.3	0.2			0.1
Nitrite Nitrogen	NO ₂ ⁻ -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO ₃ ⁻ -N	mg/L	0.67	0.67	10	10	0.1
Fluoride	F ⁻	mg/L	0.17	0.84	4		0.5
pH			7.91	7.51	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	265	259			
Temperature		°C	4.3	4.0			

Legend	Notes:
MCL: Maximum Contaminant Level	(1) Turbidity must not exceed 0.3 NTU in 95% of daily samples in any month
Sec.Std: Secondary Standard	(2) EPA Guidance Level
NTU: Nephelometric Turbidity Unit	(3) As Calcium Carbonate
mg/l: Milligram Per Liter	mg/l is equivalent to part per million (ppm)
MDL: Method Detection Limit	(4) By Titration
< : Less than	(5) Tap Water Hardness in Grains per Gallon 6.96 GPG
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

Analyst: Brian Brown
Reviewed By: Patrick Williford

Sr. Analytical Chemist
Principal Chemist

Initial
Initial

B. B.
P. W.

Date: May 23, 2013
Date: 05/24/2013

Sue McCormick
Detroit Water & Sewerage Department

Detroit Water and Sewerage Department
Water Quality Division
Laboratory Analysis of Water Samples Collected at
Water Works Park Plant
03/12/2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	2.20	0.06	0.3/95% (1)		
Total Solids		mg/L	126	130		500	10
Total Dissolved Solids		mg/L	142	139		500	10
Aluminum	Al	mg/L	0.272	0.135		0.05-0.2	0.005
Iron	Fe	mg/L	0.103	0.340		0.3	0.005
Copper	Cu	mg/L	0.006	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.74	7.99			0.5
Calcium	Ca	mg/L	26.8	27.1			0.1
Sodium	Na	mg/L	5.30	6.28		20 (2)	0.1
Potassium	K	mg/L	1.02	0.97			0.1
Manganese	Mn	mg/L	< 0.002	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	0.7	0.8			0.4
Sulfate	SO ₄ ²⁻	mg/L	18.3	31.2			
Chloride	Cl ⁻	mg/L	9.0	12.5		250	5
Phosphorus	P	mg/L	< 0.05	0.25			0.05
Free Carbon Dioxide	CO ₂	mg/L	2.3	8.0			
Total Hardness (3), (4), (5)		mg/L	105	103			
Total Alkalinity (3)		mg/L	76	84			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	76	84			
Non-Carbonate Hardness (3)		mg/L	29	19			
Chemical Oxygen Demand		mg/L	4.0	6.4			2
Dissolved Oxygen		mg/L	15.6	16.4			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	< 0.1	< 0.1			0.1
Nitrite Nitrogen	NO ₂ ⁻ -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO ₃ ⁻ -N	mg/L	0.41	0.39	10	10	0.1
Fluoride	F ⁻	mg/L	0.10	0.68	4		0.5
pH			7.82	7.32	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	245	251			
Temperature		°C	7.4	8.4			

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