

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Southwest Plant
February 6th, 2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	4.70	0.05	0.3/95% (1)		
Total Solids		mg/L	225	165		500	10
Total Dissolved Solids		mg/L	120	116		500	10
Aluminum	Al	mg/L	2.320	0.146		0.05-0.2	0.005
Iron	Fe	mg/L	1.245	< 0.050		0.3	0.005
Copper	Cu	mg/L	0.034	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	8.57	7.70			0.5
Calcium	Ca	mg/L	29.6	28.9			0.1
Sodium	Na	mg/L	5.38	5.47		20 (2)	0.1
Potassium	K	mg/L	1.23	0.99			0.1
Manganese	Mn	mg/L	0.023	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	19.4	26.2			
Chloride	Cl ⁻	mg/L	9.0	11.0		250	5
Phosphorus	P	mg/L	< 0.05	0.31			0.05
Free Carbon Dioxide	CO ₂	mg/L	2.1	1.5			
Total Hardness (3), (4), (5)		mg/L	105	115			
Total Alkalinity (3)		mg/L	86	81			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	86	81			
Non-Carbonate Hardness (3)		mg/L	19	34			
Chemical Oxygen Demand		mg/L	10.8	2.8			2
Dissolved Oxygen		mg/L	15.0	13.4			
Ammonia Nitrogen	NH ₃ -N	mg/L	0.1	< 0.1			0.1
Organic Nitrogen		mg/L	0.6	0.3			0.1
Nitrite Nitrogen	NO ₂ ⁻ -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO ₃ ⁻ -N	mg/L	0.60	0.65	10	10	0.1
Fluoride	F ⁻	mg/L	0.26	0.61	4		0.5
pH			7.92	8.04	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	243	247			
Temperature		°C	1.1	4.7			

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 6.67 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 17, 2013
Date: 05/20/2013

Sue McCormick
Detroit Water & Sewerage Department

City of Detroit
Water and Sewerage Department
Laboratory Analysis of Water Samples Collected at
Water Works Park Plant
February 6th, 2013

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	6.40	0.10	0.3/95% (1)		
Total Solids		mg/L	150	145		500	10
Total Dissolved Solids		mg/L	126	131		500	10
Aluminum	Al	mg/L	0.177	0.089		0.05-0.2	0.005
Iron	Fe	mg/L	0.232	0.081		0.3	0.005
Copper	Cu	mg/L	0.008	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	7.31	7.44			0.5
Calcium	Ca	mg/L	25.5	25.9			0.1
Sodium	Na	mg/L	5.32	6.41		20 (2)	0.1
Potassium	K	mg/L	1.26	1.12			0.1
Manganese	Mn	mg/L	0.004	< 0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO ₂	mg/L	1.0	0.9			0.4
Sulfate	SO ₄ ²⁻	mg/L	18.1	31.2			
Chloride	Cl ⁻	mg/L	9.0	11.0		250	5
Phosphorus	P	mg/L	< 0.05	0.29			0.05
Free Carbon Dioxide	CO ₂	mg/L	0.9	4.7			
Total Hardness (3), (4), (5)		mg/L	97	100			
Total Alkalinity (3)		mg/L	56	82			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	56	82			
Non-Carbonate Hardness (3)		mg/L	41	18			
Chemical Oxygen Demand		mg/L	8.0	< 2.0			2
Dissolved Oxygen		mg/L	11.8	13.6			
Ammonia Nitrogen	NH ₃ -N	mg/L	< 0.1	0.1			0.1
Organic Nitrogen		mg/L	0.3	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	0.48	0.45	10	10	0.1
Fluoride	F ⁻	mg/L	0.11	0.55	4		0.5
pH			8.11	7.54	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	222	240			
Temperature		°C	5.7	6.8			

Legend	Notes:
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