

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**April 7, 2009**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	5.00	0.10	0.3/95% (1)		
Total Solids		mg/L	180	146		500	10
Total Dissolved Solids		mg/L	132	142		500	10
Aluminum	Al	mg/L	0.584	0.061		0.05-0.2	0.005
Iron	Fe	mg/L	0.781	<0.050		0.3	0.005
Copper	Cu	mg/L	0.013	0.006	1.3		0.002
Magnesium	Mg	mg/L	8.95	7.49			0.5
Calcium	Ca	mg/L	28.9	29.3			0.1
Sodium	Na	mg/L	6.65	6.44		20 (2)	0.1
Potassium	K	mg/L	1.27	0.95			0.1
Manganese	Mn	mg/L	0.022	<0.002		0.05	0.002
Zinc	Zn	mg/L	<0.1	<0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/L	1.31	1.7			0.4
Sulfate	SO <sub>4</sub>	mg/L	17.8	34.4			
Chloride	Cl <sup>-</sup>	mg/L	8.5	9.5		250	5
Phosphorus	P	mg/L	<0.05	0.36			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	0.8	4.6			
Total Hardness (3), (4), (5)		mg/L	102	104			
Total Alkalinity (3)		mg/L	86	76			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	86	76			
Non-Carbonate Hardness (3)		mg/L	16	28			
Chemical Oxygen Demand		mg/L	<2.0	<2.0			2
Dissolved Oxygen		mg/L	11.8	12.9			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/L	<0.1	<0.1			0.1
Organic Nitrogen		mg/L	0.4	0.1			0.1
Nitrite Nitrogen	NO <sub>2</sub> -N	mg/L	<0.1	<0.1	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> -N	mg/L	0.43	0.44	10	10	0.1
Fluoride	F	mg/L	0.1	0.9	4		0.5
pH			7.96	7.52	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	225	234			
Temperature		°C	7.2	8.1			

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
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument detection limit.
IV: Invalid Sample	<b>6.03 GPG</b>

Analyst: Brian Brown  
Reviewed By: Mary Lynn Semegan

Sr. Analytical Chemist  
Water Quality Manager

Initial **B. B.**  
Initial **M.L.S.**

Date: June 5, 2009  
Date: June 5, 2009

**Pam Turner**  
**Detroit Water & Sewerage Department**