

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**July 15, 2004**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	2.80	0.09	0.3/95% (1)		
Total Solids		mg/l	175	187		500	10
Total Dissolved Solids		mg/l	126	128		500	10
Aluminum	Al	mg/l	0.198	0.168		0.05-0.2	0.005
Iron	Fe	mg/l	0.463	0.018		0.3	0.002
Copper	Cu	mg/l	0.016	0.005	1.3		0.001
Magnesium	Mg	mg/l	8.35	8.12			0.2
Calcium	Ca	mg/l	19.0	19.8			0.06
Sodium	Na	mg/l	5.30	5.64		20 (2)	0.01
Potassium	K	mg/l	1.24	1.19			0.01
Manganese	Mn	mg/l	0.008	<0.001		0.05	0.001
Zinc	Zn	mg/l	<0.01	<0.01		5	0.01
Silica	SiO <sub>2</sub>	mg/l	7.56	12.21			0.4
Sulfate	SO <sub>4</sub>	mg/l	14.8	29.6			
Chloride	Cl <sup>-</sup>	mg/l	9.2	11.1		250	1
Phosphorus	P	mg/l	<0.01	0.14			0.01
Free Carbon Dioxide	CO <sub>2</sub>	mg/l	0.3	3.0			
Total Hardness (3), (4), (5)		mg/l	110	108			
Total Alkalinity (3)		mg/l	80	79			
Carbonate Alkalinity (3)		mg/l	0	0			
Bi-Carbonate Alkalinity (3)		mg/l	80	79			
Non-Carbonate Hardness (3)		mg/l	30	29			
Chemical Oxygen Demand		mg/l	6.4	2.8			2
Dissolved Oxygen		mg/l	10.2	0.0			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/l	<0.10	<0.10			0.1
Organic Nitrogen		mg/l	0.3	0.2			0.1
Nitrite Nitrogen	NO <sub>2</sub> -N	mg/l	<0.01	<0.01	1		0.01
Nitrate Nitrogen	NO <sub>3</sub> -N	mg/l	0.59	0.60	10	10	0.01
Fluoride	F	mg/l	1.0	0.1	4		0.1
pH			8.42	7.72	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	190	199			
Temperature in °C.			22.7	22.7			

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
EF: Equipment Failure	<b>6.26 GPG</b>
IV: Invalid Sample	

Analyst: Brian Brown

Sr. Analytical Chemist

Initial **B. B.**

Date: Aug 27, 2004

Reviewed By: Bahi Habib, P.E. Chemical Engineer

Initial **B. H.**

Date: Aug 30, 2004

**Victor M. Mercado, Director**  
**Detroit Water & Sewerage Department**