

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**November 9, 2004**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	11.00	0.07	0.3/95% (1)		
Total Solids		mg/l	184	167		500	10
Total Dissolved Solids		mg/l	106	115		500	10
Aluminum	Al	mg/l	0.431	0.070		0.05-0.2	0.005
Iron	Fe	mg/l	0.829	0.025		0.3	0.002
Copper	Cu	mg/l	0.014	0.010	1.3		0.001
Magnesium	Mg	mg/l	9.46	12.94			0.2
Calcium	Ca	mg/l	26.0	21.6			0.06
Sodium	Na	mg/l	6.07	6.29		20 (2)	0.01
Potassium	K	mg/l	1.06	0.93			0.01
Manganese	Mn	mg/l	0.012	<0.001		0.05	0.001
Zinc	Zn	mg/l	<0.01	<0.01		5	0.01
Silica	SiO <sub>2</sub>	mg/l	15.96	19.0			0.4
Sulfate	SO <sub>4</sub>	mg/l	34.7	45.8			
Chloride	Cl <sup>-</sup>	mg/l	9.2	10.5		250	1
Phosphorus	P	mg/l	<0.01	0.38			0.01
Free Carbon Dioxide	CO <sub>2</sub>	mg/l	1.1	5.2			
Total Hardness (3), (4), (5)		mg/l	107	109			
Total Alkalinity (3)		mg/l	89	74			
Carbonate Alkalinity (3)		mg/l	0	0			
Bi-Carbonate Alkalinity (3)		mg/l	89	74			
Non-Carbonate Hardness (3)		mg/l	18	35			
Chemical Oxygen Demand		mg/l	3.4	<2.0			2
Dissolved Oxygen		mg/l	AE	AE			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/l	<0.10	<0.10			0.1
Organic Nitrogen		mg/l	0.2	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	0.47	0.42	10	10	0.01
Fluoride	F	mg/l	0.01	0.89	4		0.1
pH			7.94	7.45	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	249	252			
Temperature in °C.			AE	AE			

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>6.32 GPG</b>
IV: Invalid Sample	

Analyst: Brian Brown

Sr. Analytical Chemist

Initial **B. B.**

Date: Mar 4, 2005

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

Initial **B. H.**

Date: Mar 7, 2005

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