

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**August 14, 2012**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	5.30	0.12	0.3/95% (1)		
Total Solids		mg/L	157	155		500	10
Total Dissolved Solids		mg/L	144	145		500	10
Aluminum	Al	mg/L	0.146	0.127		0.05-0.2	0.005
Iron	Fe	mg/L	0.934	0.152		0.3	0.005
Copper	Cu	mg/L	0.030	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	6.00	7.54			0.5
Calcium	Ca	mg/L	16.5	24.1			0.1
Sodium	Na	mg/L	2.92	4.77		20 (2)	0.1
Potassium	K	mg/L	0.52	0.81			0.1
Manganese	Mn	mg/L	0.007	0.003		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO <sub>2</sub>	mg/L	0.5	0.5			0.4
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	17.5	24.2			
Chloride	Cl <sup>-</sup>	mg/L	9.0	10.0		250	5
Phosphorus	P	mg/L	< 0.05	0.30			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	2.8	8.1			
Total Hardness (3), (4), (5)		mg/L	103	106			
Total Alkalinity (3)		mg/L	98	72			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	98	72			
Non-Carbonate Hardness (3)		mg/L	5	34			
Chemical Oxygen Demand		mg/L	37.2	35.6			2
Dissolved Oxygen		mg/L	9.3	10.7			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/L	0.2	0.1			0.1
Organic Nitrogen		mg/L	< 0.1	0.2			0.1
Nitrite Nitrogen	NO <sub>2</sub> <sup>-</sup> -N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO <sub>3</sub> <sup>-</sup> -N	mg/L	0.27	0.27	10	10	0.1
Fluoride	F <sup>-</sup>	mg/L	0.11	0.85	4		0.5
pH			7.84	7.25	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	209	216			
Temperature		°C	23.2	23.2			

**Legend**

MCL: Maximum Contaminant Level  
 Sec.Std: Secondary Standard  
 NTU: Nephelometric Turbidity Unit  
 mg/l: Milligram Per Liter  
 MDL: Method Detection Limit  
 < : Less than  
 AE: Analytical Error  
 IV: Invalid Sample

**Notes:**

(1) Turbidity must not exceed 0.3 NTU in 95% of daily samples in any month  
 (2) EPA Guidance Level  
 (3) As Calcium Carbonate  
 mg/l is equivalent to part per million (ppm)  
 (4) By Titration  
 (5) Tap Water Hardness in Grains per Gallon **6.15 GPG**  
 (6) Reported results are below the low calibration standard but above the instrument detection limit.

Analyst: Brian Brown

Reviewed By: Patrick Williford

Sr. Analytical Chemist

Principal Chemist

Initial

**B. B.**

Date: Sept 21, 2012

Initial

**P. W.**

Date: 09/21/2012

**Sue McCormick**

**Detroit Water & Sewerage Department**