

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**December 6, 2011**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	11.00	0.03	0.3/95% (1)		
Total Solids		mg/L	141	133		500	10
Total Dissolved Solids		mg/L	118	120		500	10
Aluminum	Al	mg/L	0.540	0.086		0.05-0.2	0.005
Iron	Fe	mg/L	0.937	0.057		0.3	0.005
Copper	Cu	mg/L	0.029	< 0.005	1.3		0.002
Magnesium	Mg	mg/L	8.23	7.82			0.5
Calcium	Ca	mg/L	27.1	22.8			0.1
Sodium	Na	mg/L	5.08	4.81		20 (2)	0.1
Potassium	K	mg/L	1.14	0.90			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 <sub>2</sub>	mg/L	0.8	0.9			0.4
Sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/L	37.5	48.1			
Chloride	Cl <sup>-</sup>	mg/L	8.5	10.5		250	5
Phosphorus	P	mg/L	< 0.05	0.29			0.05
Free Carbon Dioxide	CO <sub>2</sub>	mg/L	1.7	6.1			
Total Hardness (3), (4), (5)		mg/L	108	107			
Total Alkalinity (3)		mg/L	87	93			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	87	93			
Non-Carbonate Hardness (3)		mg/L	21	14			
Chemical Oxygen Demand		mg/L	6.8	< 2.0			2
Dissolved Oxygen		mg/L	13.6	13.7			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/L	N/A	N/A			0.1
Organic Nitrogen		mg/L	N/A	N/A			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	0.37	0.36	10	10	0.1
Fluoride	F <sup>-</sup>	mg/L	0.12	0.63	4		0.5
pH			8.00	7.48	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	224	233			
Temperature		°C	7.2	7.5			

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 <b>6.21 GPG</b>
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

Analyst: Brian Brown  
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Principal Chemist

Initial **B. B.** Date: Mar 1, 2012  
Initial **P. W.** Date: 03/05/2012

**Sue McCormick**  
**Detroit Water & Sewerage Department**