City of Detroit

Water and Sewerage Department

Laboratory Analysis of Water Samples Collected at Southwest Plant

July 10, 2012

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	10.10	0.05	0.3/95% (1)		
Total Solids		mg/L	147	146		500	10
Total Dissolved Solids		mg/L	139	140		500	10
Aluminum	Al	mg/L	0.217	0.134		0.05-0.2	0.005
Iron	Fe	mg/L	0.301	< 0.050		0.3	0.005
Copper	Cu	mg/L	0.034	0.005	1.3		0.002
Magnesium	Mg	mg/L	7.99	7.76			0.5
Calcium	Ca	mg/L	26.1	24.2			0.1
Sodium	Na	mg/L	5.46	5.17		20 (2)	0.1
Potassium	K	mg/L	0.99	0.83			0.1
Manganese	Mn	mg/L	0.011	0.002		0.05	0.002
Zinc	Zn	mg/L	< 0.1	< 0.1		5	0.1
Silica	SiO_2	mg/L	0.3	0.5			0.4
Sulfate	SO_4^{2-}	mg/L	18.6	24.4			
Chloride	Cl^-	mg/L	8.5	10.0		250	5
Phosphorus	P	mg/L	< 0.05	**AE**			0.05
Free Carbon Dioxide	CO_2	mg/L	0.4	3.1			
Total Hardness (3), (4), (5)		mg/L	99	106			
Total Alkalinity (3)		mg/L	85	80			
Carbonate Alkalinity (3)		mg/L	0	0			
Bi-Carbonate Alkalinity (3)		mg/L	85	80			
Non-Carbonate Hardness (3)		mg/L	14	26			
Chemical Oxygen Demand		mg/L	6.4	4.8			2
Dissolved Oxygen		mg/L	7.5	7.2			
Ammonia Nitrogen	NH_3-N	mg/L	< 0.1	< 0.1			0.1
Organic Nitrogen		mg/L	0.3	0.2			0.1
Nitrite Nitrogen	NO_2^--N	mg/L	< 0.1	< 0.1	1		0.1
Nitrate Nitrogen	NO_3^--N	mg/L	0.17	0.20	10	10	0.1
Fluoride	F^-	mg/L	0.18	0.95	4		0.5
pH			8.59	7.71	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	202	210			
Temperature		°C	25.2	25.3			

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 Hardnessin in Grains per Gallon **6.15 GPG**
AE: Analytical Error	(6) Reported results are below the low calibration standard but above the instrument
IV: Invalid Sample	detection limit.

Analyst: Brian Brown Sr. Analytical Chemist Initial **B. B.** Date: Sept 20, 2012

Reviewed By: Patrick Williford Principal Chemist Initial **P. W.** Date: 09/21/2012

Sue McCormick

Detroit Water & Sewerage Department

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