

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**October 25, 2011**

| Parameter                     | Formula | Units     | Raw   | Tap    | MCL         | Sec.Std  | MDL   |
|-------------------------------|---------|-----------|-------|--------|-------------|----------|-------|
| Turbidity                     |         | NTU       | 17.00 | 0.04   | 0.3/95% (1) |          |       |
| Total Solids                  |         | mg/L      | 160   | 175    |             | 500      | 10    |
| Total Dissolved Solids        |         | mg/L      | 124   | 186    |             | 500      | 10    |
| Aluminum                      | Al      | mg/L      | 0.353 | <0.050 |             | 0.05-0.2 | 0.005 |
| Iron                          | Fe      | mg/L      | 0.157 | <0.050 |             | 0.3      | 0.005 |
| Copper                        | Cu      | mg/L      | 0.034 | <0.005 | 1.3         |          | 0.002 |
| Magnesium                     | Mg      | mg/L      | 7.31  | 7.82   |             |          | 0.5   |
| Calcium                       | Ca      | mg/L      | 27.2  | 27.4   |             |          | 0.1   |
| Sodium                        | Na      | mg/L      | 7.24  | 6.34   |             | 20 (2)   | 0.1   |
| Potassium                     | K       | mg/L      | 1.33  | 1.20   |             |          | 0.1   |
| Manganese                     | Mn      | mg/L      | 0.003 | <0.002 |             | 0.05     | 0.002 |
| Zinc                          | Zn      | mg/L      | <0.1  | <0.1   |             | 5        | 0.1   |
| Silica                        | SiO2    | mg/L      | 0.7   | 1.1    |             |          | 0.4   |
| Sulfate                       | SO4     | mg/L      | 41.8  | 43.6   |             |          |       |
| Chloride                      | Cl-     | mg/L      | 10.0  | 13.0   |             | 250      | 5     |
| Phosphorus                    | P       | mg/L      | <0.05 | 0.29   |             |          | 0.05  |
| Free Carbon Dioxide           | CO2     | mg/L      | 2.2   | 8.4    |             |          |       |
| Total Hardness (3), (4), (5)  |         | mg/L      | 110   | 133    |             |          |       |
| Total Alkalinity (3)          |         | mg/L      | 96    | 99     |             |          |       |
| Carbonate Alkalinity (3)      |         | mg/L      | 0     | 0      |             |          |       |
| Bi-Carbonate Alkalinity (3)   |         | mg/L      | 96    | 99     |             |          |       |
| Non-Carbonate Hardness (3)    |         | mg/L      | 14    | 34     |             |          |       |
| Chemical Oxygen Demand        |         | mg/L      | 3.2   | 2.8    |             |          | 2     |
| Dissolved Oxygen              |         | mg/L      | 10.1  | 10.1   |             |          |       |
| Ammonia Nitrogen              | NH3-N   | mg/L      | 0.8   | 0.8    |             |          | 0.1   |
| Organic Nitrogen              |         | mg/L      | 0.6   | 0.6    |             |          | 0.1   |
| Nitrite Nitrogen              | NO2-N   | mg/L      | <0.1  | <0.1   | 1           |          | 0.1   |
| Nitrate Nitrogen              | NO3-N   | mg/L      | 0.36  | 0.34   | 10          | 10       | 0.1   |
| Fluoride                      | F       | mg/L      | 0.11  | 0.78   | 4           |          | 0.5   |
| pH                            |         |           | 7.94  | 7.37   | 6.5-8.5     | 6.5-8.5  |       |
| Specific Conductance @ 25 oC. |         | micromhos | 242   | 257    |             |          |       |
| Temperature                   |         | °C        | 12.7  | 12.6   |             |          |       |

| 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>7.71 GPG</b>                          |
| AE: Analytical Error              | (6) Reported results are below the low calibration standard but above the instrument |
| IV: Invalid Sample                | detection limit.   |

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Initial **B. B.** Date: Jan 19,2012  
Initial **P. W.** Date: 01/30/2012

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