Starkweather, E. Br. at Milwaukee

Road Salt Monitoring Data Summary

February –December 2011

Photo by Jake and Erin Vennie-Vollrath

Volunteers: Erin and Jake Vennie-Vollrath

Specific conductance summary:

- 9 measurements taken
- Minimum: 300 µS/cm on 9/3/2011
- Maximum: 2600 µS/cm on 3/11/2011
- Mean: 1553 µS/cm

Chloride (Cl^-) summary:

- 3 samples collected
- Minimum: 35.5 mg/L 9/3/2011
- Maximum: 630 mg/L 2/17/2011
- Mean: 291 mg/L

Specific conductance ranges at which to collect grab samples in 2012 for this site:

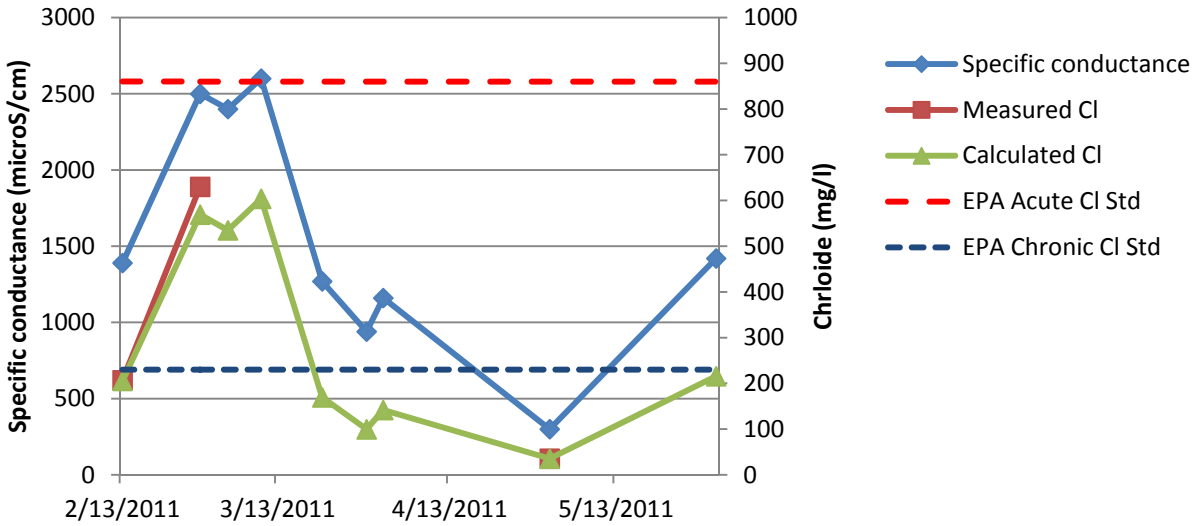
- Mid-level: 1000-2000 µS/cm
- High-level: >2000 µS/cm

EPA Acute and Chronic Exceedences for Chloride[1]:

The EPA acute chloride standard of 860 mg/L was not exceeded at this site. The EPA chronic chloride standard of 230 mg/L was exceeded three times:

- 535 mg/L on 3/2/2011 (calculated) [2]
- 604 mg/L on 3/11/2011 (calculated)
- 696 mg/L on 2/17/2011 (measured)

Results Over Time[2]:



[1] EPA acute chloride standard: The one-hour average concentration should not exceed 860 mg/L more than once every three years. EPA chronic chloride standard: The four day average concentration should not exceed 230 mg/L more than once every three years on average. Source: EPA. 1988. Ambient Water Quality Criteria for Chloride. EPA 440/6-88-001.

[2] Two regression equations calculated based on specific conductance and chloride data collected from the Madison and Milwaukee areas collectively. The equation used when specific conductance >1540 µS/cm was Cl = 0.3441 * SC – 291, adjR^2 = 0.98; and when specific conductance ≤ 1540 µS/cm was Cl = 1.044 * (exp(0.001609 * SC + 3.046)), adj R^2 = 0.65.