

Willow Creek at Maple Rd

Road Salt Monitoring Data Summary

February –December 2011



Photo courtesy of Jim Beecher

Volunteer: Chris Hitch

Specific conductance summary:

- 10 measurements taken
- Minimum: 1000 $\mu\text{S}/\text{cm}$ on 9/20/2011
- Maximum: 1740 $\mu\text{S}/\text{cm}$ on 3/12/2011
- Mean: 1289 $\mu\text{S}/\text{cm}$

Chloride (Cl⁻) summary:

- 6 samples collected
- Minimum: 103 mg/L 9/20/2011
- Maximum: 186 mg/L 2/15/2011
- Mean: 141 mg/L

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

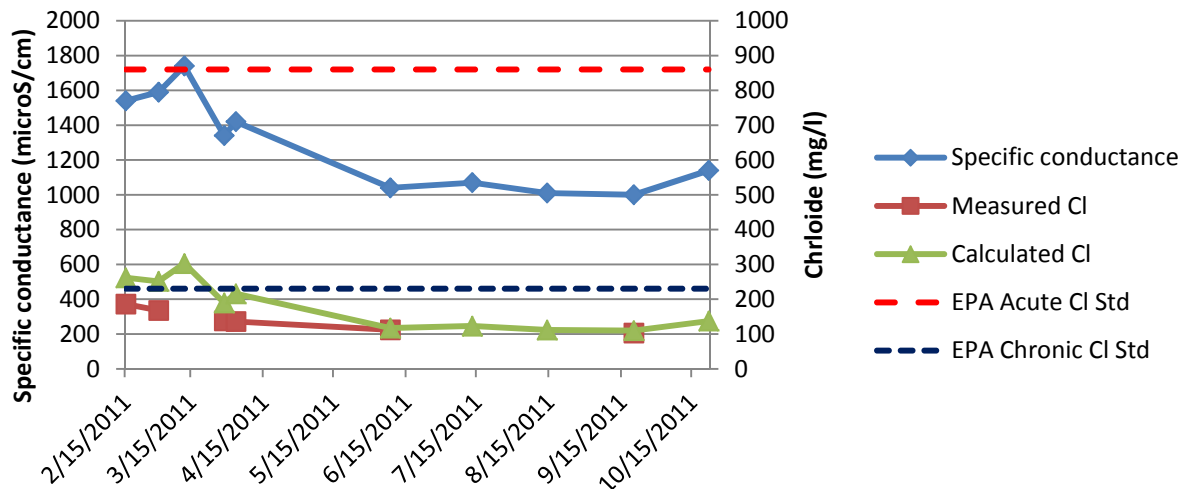
- Mid-level: 900-1000 $\mu\text{S}/\text{cm}$
- High-level: >1500 $\mu\text{S}/\text{cm}$

EPA Acute and Chronic Exceedences for Chloride¹:

Neither the EPA acute chloride standard of 860 mg/L was not exceeded at this site. However the chronic chloride standard of 230 mg/L was exceeded three times at this site based on volunteer monitoring in 2011:

- 251 mg/L on 3/1/2011 (calculated)
- 261 mg/L on 2/15/2011 (calculated)
- 261 mg/L on 3/12/2011 (calculated)

Results Over Time²:



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

² Calculated chloride: When $\text{SC} > 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 0.3441 * \text{SC} - 291$, $\text{adjR}^2 = 0.98$; when $\text{SC} \leq 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 1.044 * (\exp(0.001609 * \text{SC} + 3.046))$, $\text{adjR}^2 = 0.65$. Equations based on data from both Madison and Milwaukee.