

Little Menomonee River Hwy 145

Road Salt Monitoring Data Summary

February –December 2011



Photo courtesy of Jim Beecher

Volunteers: John Schafer and Jessica Zalewski

Specific conductance summary:

- 11 measurements taken
- Minimum: 460 $\mu\text{S}/\text{cm}$ on 5/25/2011
- Maximum: 6400 $\mu\text{S}/\text{cm}$ on 2/14/2011 and 3/12/2011
- Mean: 2059 $\mu\text{S}/\text{cm}$

Chloride (Cl⁻) summary:

- 5 samples collected
- Minimum: 103 mg/L 10/24/2011
- Maximum: 1750 mg/L 2/14/2011
- Mean: 580 mg/L

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

- Mid-level: 2000-4000 $\mu\text{S}/\text{cm}$
- High-level: >4000 $\mu\text{S}/\text{cm}$

EPA Acute and Chronic Exceedences for Chloride¹:

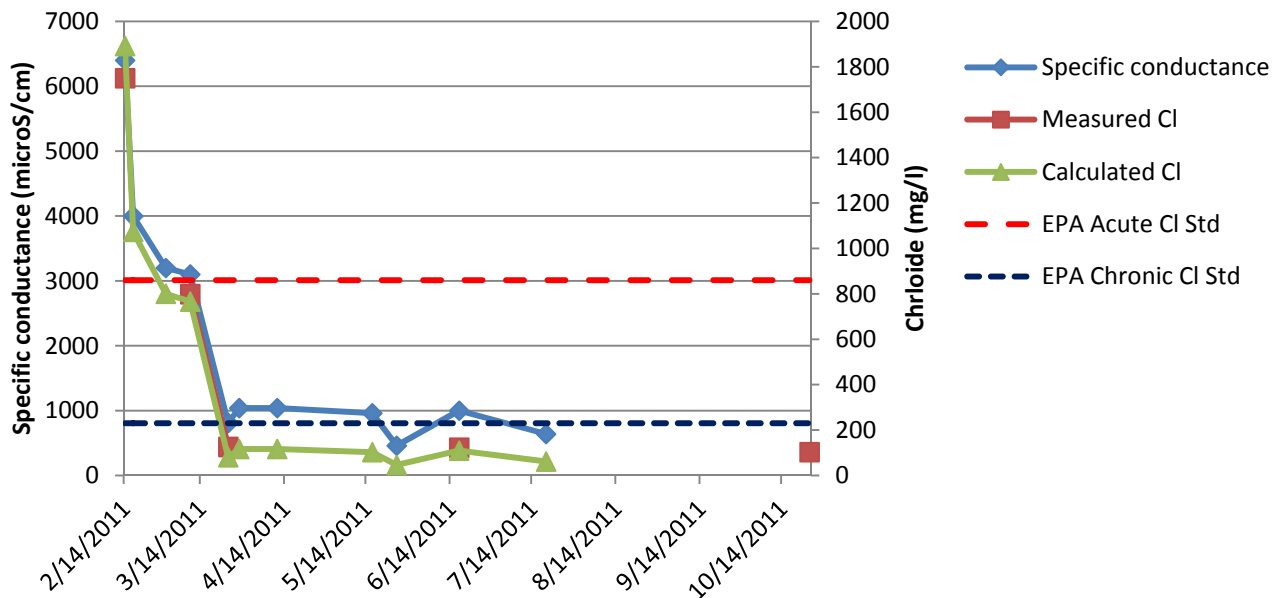
The EPA acute chloride standard of 860 mg/L was exceeded twice at this site:

- 1073 mg/L on 2/17/2011 (calculated)²
- 1750 mg/L on 2/14/2011 (measured)

In addition, the EPA chronic chloride standard of 230 mg/L was exceeded twice:

- 799 mg/L on 3/10/2011 (measured)
- 801 mg/L on 3/1/2011 (calculated)²

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 SC >1540 $\mu\text{S}/\text{cm}$ was Cl = 0.3441 * SC – 291, adjR² = 0.98; when SC was \leq 1540 $\mu\text{S}/\text{cm}$ was Cl = 1.044 * (exp(0.001609 * SC + 3.046)), adj R² = 0.65. Equations based on data from both Madison and Milwaukee.