

Little Menomonee River Hwy 145

Road Salt Monitoring Data Summary

February 2011–December 2012



Photo courtesy of Jim Beecher

Volunteers: John Schafer and Jessica Zalewski

Specific conductance summary:

- 24 measurements taken
- Minimum: 460 $\mu\text{S}/\text{cm}$ on 5/25/2011
- Maximum: 6400 $\mu\text{S}/\text{cm}$ on 2/14/2011
- Mean: 1821 $\mu\text{S}/\text{cm}$

Chloride (Cl^-) summary:

- 8 samples collected
- Minimum: 103 mg/L on 10/24/2011
- Maximum: 1750 mg/L on 2/14/2011
- Mean: 462 mg/L

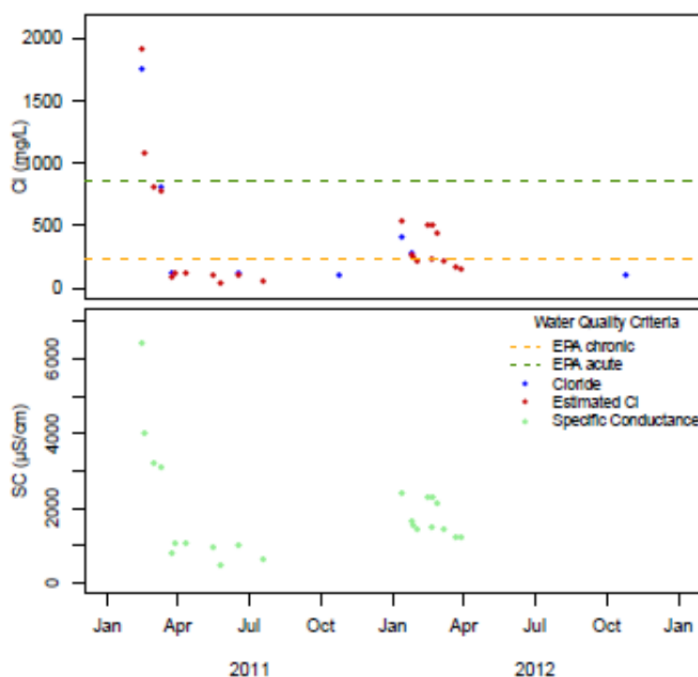
EPA Acute and Chronic Exceedences for Chloride¹:

The EPA acute chloride standard of 860 mg/L was exceeded two times in 2011² at this site, but zero times in 2012.

In addition, the EPA chronic chloride standard of 230 mg/L was exceeded two times in 2011² at this site, plus an additional seven times in 2012:

- 234 mg/L on 2/20/2012 (calculated)³
- 253 mg/L on 1/27/2012 (calculated)
- 275 mg/L on 1/25/2012 (measured)
- 410 mg/L on 1/13/2012 (measured)
- 432 mg/L on 2/27/2012 (calculated)
- 500 mg/L on 2/15/2012 and 2/21/2012 (calculated)

Results Over Time³:



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 <http://watermonitoring.uwex.edu/level3/UrbanRoadSaltReports.html>

³ 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 SC was $\leq 1540 \mu\text{S}/\text{cm}$ 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.