

Lily Creek at Good Hope Rd

Road Salt Monitoring Data Summary

February 2011–December 2012



Photo courtesy of Jim Beecher

Volunteer: Joe Rath

Specific conductance summary:

- 16 measurements taken
- Minimum: 950 $\mu\text{S}/\text{cm}$ on 8/14/2011
- Maximum: 3300 $\mu\text{S}/\text{cm}$ on 3/1/2011 and 3/12/2011
- Mean: 1718 $\mu\text{S}/\text{cm}$

Chloride (Cl^-) summary:

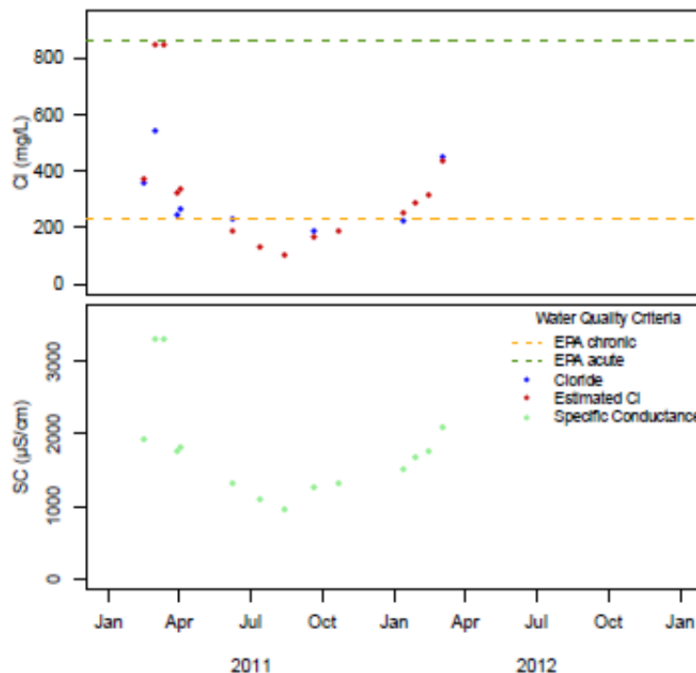
- 8 samples collected
- Minimum: 188 mg/L on 9/20/2011
- Maximum: 539 mg/L on 3/1/2011
- Mean: 310 mg/L

EPA Acute and Chronic Exceedences for Chloride¹:

The EPA acute chloride standard of 860 mg/L was not exceeded at this site in 2011² or in 2012. However, the EPA chronic chloride standard of 230 mg/L was met or exceeded six times in 2011², plus an additional four times in 2012:

- 249 mg/L on 1/13/2012 (calculated)³
- 287 mg/L on 1/28/2012 (calculated)
- 315 mg/L on 2/14/2012 (calculated)
- 448 mg/L on 3/3/2012 (measured)

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.