

Pheasant Branch at Parmenter (Hwy 12)

Road Salt Monitoring Data Summary



Photos courtesy of Jim Beecher

February – December 2011

Volunteers: Eric Grazia and Jim Beecher

Specific conductance summary:

- 13 measurements taken
- Minimum: 520 $\mu\text{S}/\text{cm}$ on 8/8/2011
- Maximum: 1880 $\mu\text{S}/\text{cm}$ on 2/17/2011
- Mean: 1106 $\mu\text{S}/\text{cm}$

Chloride (Cl⁻) summary:

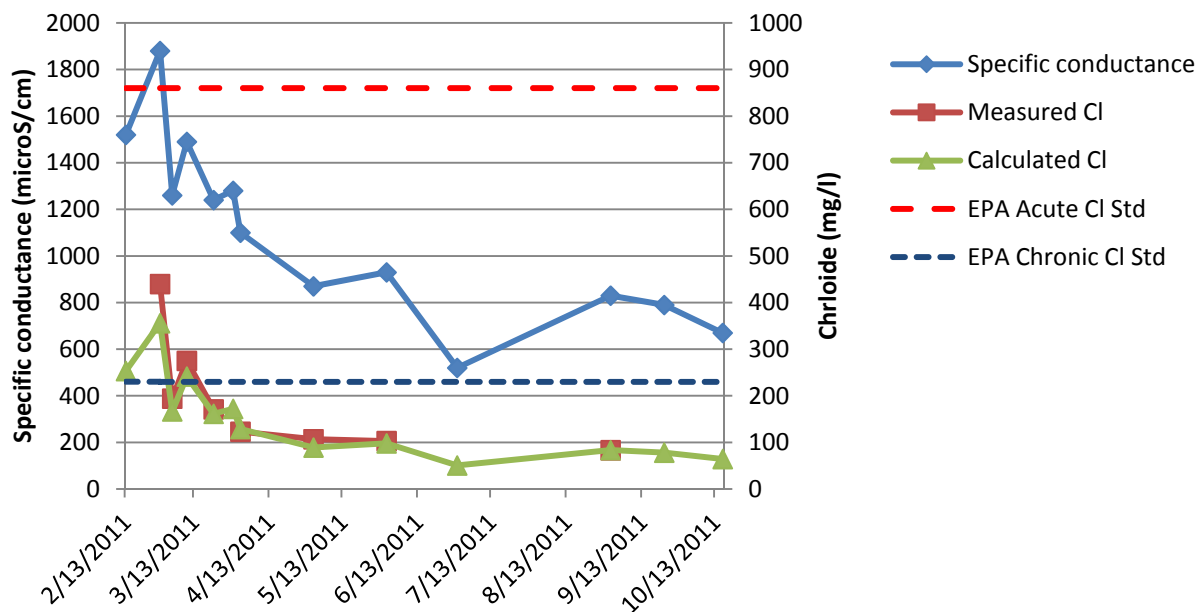
- 9 samples collected
- Minimum: 83.4 mg/L 9/11/2011
- Maximum: 440 mg/L 2/17/2011
- Mean: 185 mg/L

EPA Acute and Chronic Exceedences for Chloride¹:

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:

- 253 mg/L on 2/14/2011 (calculated)²
- 440 mg/L on 2/17/2011 (measured)
- 275 mg/L on 3/10/2011 (measured)

Results Over Time²:



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 $>1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 0.3441 * \text{SC} - 291$, $\text{adj}R^2 = 0.98$; and when specific conductance $\leq 1540 \mu\text{S}/\text{cm}$ was $\text{Cl} = 1.044 * (\exp(0.001609 * \text{SC} + 3.046))$, $\text{adj}R^2 = 0.65$.