2020-2022 Surface Water Standards Triennial Review - Cadmium Calculations

Acute Calculations

Trout	CMC= e^(0.9789*ln(hardness) - 3.866) * Conversion Factor where, Conversion Factor = 1.136672 - [(ln(hardness) * (0.041838))] Hardness = **25** <-- enter CMC= **0.490** Based on CMC = 1.9 for rainbow trout @ 100 mg/L hardness
Class C	CMC= e^(0.9789*ln(hardness) - 3.443) * Conversion Factor where, Conversion Factor = 1.136672 - [(ln(hardness) * (0.041838))] Hardness = **2.5** <-- enter CMC= **0.09** Based on CMC = 2.9 @ 100 mg/L hardness - CMC based on EPA 2016 not lowered to specifically protect rainbow trout

Chronic Calculation

Class C	CCC= e^(0.7977*ln(hardness) - 3.909) * Conversion Factor where, Conversion Factor = 1.101672 - [(ln(hardness) * (0.041838))] Hardness = **25** <-- enter CCC= **0.252875** Based on FCV = 0.79 @ 100 mg/L hardness

CMC Calculation Breakdown

$$CMC = e^{(V[\ln hardness] + \ln A - V[\ln Z])}$$

A = **2.9** CMC (FAV/2) via ranking (FAV = 5.733 ug/L; page 43)
V = **0.9789** pooled acute slope (acute tox & hardness; page 34)
Z = **100** selected (normalized) hardness value (mg/L)
variable hardness = **100**

ln A - V[ln Z] = -3.443   See Stephen et al, Part V

CCC Calculation Breakdown

$$CCC = e^{(L[\ln hardness] + \ln S - L[\ln Z])}$$

S = **0.79** Final Chronic Value (FCV) via ranking
L = **0.7977** pooled chronic slope (acute tox & hardness)
Z = **100** selected hardness value (mg/L)
variable hardness = **100**

ln A - V[ln Z] = -3.90927   See Stephen et al, Part V