Overview of EPA's Draft Revised National Cadmium AWQC for the Protection of Aquatic Life

December 10, 2015

Mike Elias
Office of Science and Technology, Office of Water
United States Environmental Protection Agency

Process Overview

- EPA released draft updated national recommended aquatic life AWQC for cadmium on December 1, 2015
  - **Docket No. EPA-HQ-OW-2015-0753**
- Public comments are being accepted for 60 days
- Criteria document has undergone Agency and external expert peer review and revision
  - External Peer Review Report and EPA Response to External Peer Review Comments were released with document

EPA-HQ-2016-005391_00001982

Process Overview

- EPA will consider public comments submitted and revise and publish the final criteria document in late spring 2016
  - Timeline is litigation-driven so adherence to 60 day comment period is critical
- Finalized cadmium criteria will provide recommendations to states and tribes authorized to establish water quality standards under the Clean Water Act

EPA-HQ-2016-005391_00001983

Criteria Update Overview

- 2015 update revises acute and chronic freshwater and estuarine/marine criteria
- Values were last updated in 2001
- Criteria revisions are based on new toxicity data, with little change in scientific approach
  - Hardness remains primary driver for freshwater criteria
  - Direct exposure effects remain focus

EPA-HQ-2016-005391_00001984

Criteria Update Overview

- Updated criteria incorporates data for more than 70 new species and 49 new genera

Number of Aquatic Species Included in Cadmium AWQC				
	Freshwater Acute	Freshwater Chronic	Estuarine/Marine Acute	Estuarine/Marine Chronic
1980	29	13	31	1
1985	52	16	35	2
2001	65	21	61	2
2015	101	27	94	2

EPA-HQ-2016-005391_00001985

Updated Criteria: Overview

- Revised freshwater criteria slightly decrease in stringency; revised estuarine/marine values slightly increase in stringency
- Values change primarily based on additional toxicity data

Summary of 2001 and 2015 Draft Aquatic Life AWQC for Cadmium (ug/L, dissolved)

	2015 AWQC Update		2001 AWQC	
	Acute (1 hour)	**Chronic** (4 day)	**Acute** (1 day)	**Chronic** (4 day)
Freshwater **(Total Hardness = 100 mg/L as $CaCO_3$)**	2.1	0.73	2.0	0.25
Estuarine/marine	35	8.3	40	8.8

Updated Criteria: Freshwater

- Fish (most notably salmonids) are drivers of acute value
- As in 2001, freshwater acute criterion was lowered to protect commercially and recreationally important rainbow trout (and other salmonids)

Summary of 2001 and 2015 Draft Freshwater Aquatic Life AWQC for Cadmium (ug/L, dissolved)				
	2015 AWQC Update		2001 AWQC	
	Acute (1 hr)	Chronic (4 day)	Acute (1 day)	Chronic (4-day)
Freshwater (Total Hardness = 100 mg/L as $CaCO_3$)	2.1	0.73	2.0	0.25

Updated Criteria: Estuarine/Marine

- Invertebrates are drivers of chronic value
- Additional toxicity data were not available for chronic value derivation; change in value was based on change in acute-to-chronic value calculation

Summary of 2001 and 2015 Draft Estuarine/Marine Aquatic Life AWQC for Cadmium (ug/L, dissolved)				
	2015 AWQC Update		2001 AWQC	
	Acute (1 hr)	Chronic (4 day)	Acute (1 day)	Chronic (4-day)
Estuarine/marine	35	8.3	40	8.8

EPA-HQ-2016-005391_00001988

Contact Information

Mike Elias
202-566-0120
elias.mike@epa.gov

EPA-HQ-2016-005391_00001989