

Koch, Kristine

From: Carl Stivers <cstivers@anchorqea.com>
Sent: Thursday, March 26, 2015 7:33 AM
To: Koch, Kristine
Cc: Sheldrake, Sean; Scott Coffey (coffeys@cdmsmith.com); James McKenna; Bob Wyatt; Jennifer Woronets
Subject: LWG Recommendation on Manganese Water PRG for RAO 8
Attachments: LWG Hardness-based Mn Criterion Memo_5 November 2014.pdf

Kristine – We discussed at the March 17 technical meeting on EPA’s revised draft Section 2 the LWG suggested changes to the manganese PRG under RAO 8, which is currently shown in draft Section 2 tables as 120 µg/L. You indicated during the meeting that it was an oversight that EPA did not change that PRG based on LWG’s input last year.

As we discussed, I have reattached here the original memo sent to EPA on November 5, 2014. Also, we thought it would be useful to summarize the LWG’s specific request on this matter.

The attached memo indicates that acute and chronic toxicity values (in water) for manganese should be hardness adjusted using the equations in the synopsis of the memo. Based on its review of this memo last year EPA agreed to our recommendation that for a chronic-based groundwater (EPA also uses the term porewater in Section 2) PRG for RAO 8, a site-specific approach be used, where site-specific porewater hardness data are used to calculate the most appropriate manganese water PRG for any particular location within the Harbor. This could be identified in the PRG table (Table 2.2-1) in Section 2 as a note in the table cell entry, with the details placed in a footnote of the table. This is similar to EPA’s current approach for the total PAH PRG in RAO 8, where “Note 6” is shown in the table cell and the referenced note at the bottom of the table describes details of that particular PRG.

Where sufficient site-specific porewater hardness data are not available, we recommend use of the 15th percentile of Portland Harbor porewater hardness data, which is 69 mg/L. Use of the 15th percentile estimate is consistent with EPA guidance (EPA 1991). The corresponding general hardness-based manganese PRG for Portland Harbor (based on the chronic value) would be 1,433 µg/L. (Note that based on the data we have, Portland Harbor TZW hardness averaged 392 mg/L, and the 10th and 90th percentile hardness concentrations were 42 and 693 mg/L.)

Accordingly, we suggest the footnote for Table 2.2-1 say, “The value for manganese is $e(0.7424[\ln(\text{hardness})] + 4.124)$. Where site-specific hardness data are not available, the 15th percentile estimate of Portland Harbor porewater hardness data of 69 mg/L will be used to estimate surface water hardness at the point of groundwater discharge.”

Please let us know if you have any questions. Thanks, Carl.

Reference: EPA. 1991. Technical support document for water quality-based toxics control. EPA/505/2-90-001. PB91-127415. Office of Water, US Environmental Protection Agency, Washington, DC.

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