From: Axelrad, Don
To: Gilmour, Cindy
Cc: scheidt.dan@epamail.epa.gov
Subject: RE: SFER: Tom DeBusk"s comments on Chapter 3B
Date: Wednesday, September 24, 2008 3:34:18 PM

Cindy,

I will get the timing / rationale for the CERP goal of 1 mg/L sulfate in Everglades surface water from Dan Scheidt (CCed).

In the 2009 SFER Chapter, I never said 1 mg/L sulfate was a water quality criterion as DeBusk is implying; it could be viewed as a NOAEC (No Observed Adverse Effects Concentration) as MeHg production, sulfide conc, PO4 release are very low. But calling it a NOAEC is probably not advisable….

I do see this text in a 2005 CERP doc:
Ecological Premise: *The efficiency of sulfate-reducing bacteria to methylate inorganic mercury is optimized under specific sulfide-to-sulfate ratios that typically occur when the average surface water*
concentration of sulfate is greater than 1 milligram per liter (mg/l) and less than 20 mg/l. That is, background concentrations less than 1 mg/l of sulfate will starve the sulfate-reducing bacteria and thus
inhibit methylation, whereas concentrations greater than 20 mg/l (which is not typical or desirable in the
Greater Everglades ecosystem) generally result in excess sulfide production by these organisms, which in
turn will also inhibit mercury methylation due to a reduction in inorganic mercury bioavailability.

Re the CERP restoration goal, in R-EMAP 2007, Dan and Pete reference:
Restoration, Coordination and Verification. 2007. Comprehensive Everglades Restoration Plan System-wide
Performance Measures. <
http://www.evergladesplan.org/pm/recover/eval_team_perf_measures.aspx >

Don

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From: Gilmour, Cindy [mailto:gilmourc@si.edu]
Sent: Wednesday, September 24, 2008 2:42 PM
To: Axelrad, Don
Subject: RE: SFER: Tom DeBusk's comments on Chapter 3B

Don –
Can you provide some info on "CERP goal of 1 mg/L sulfate in Everglades surface water" that DeBusk notes in his comments?
When was that promulgated, and on what basis?

I'm finishing up my comments on DeBusk now- Cindy

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From: Axelrad, Don
Sent: Tuesday, September 23, 2008 2:52 PM
To: Cynthia Gilmour (gilmourc@si.edu)
Cc: Bill Orem (borem@usgs.gov); Dan Scheidt (scheidt.dan@epamail.epa.gov); Curtis Pollman (cpollman@aqualuxlucis.org)
Subject: SFER: Tom DeBusk's comments on Chapter 3B

Cindy,

As discussed, Tom DeBusk's comments on SFER 2009 Chapter 3B - mercury and sulfur - just arrived (attached) and I'd appreciate it if you could write short responses to his questions, comments etc to assist me in my reply to the peer review committee.

Thanks,

Don

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