From:	Axelrad, Don
To:	scheidt.dan@epamail.epa.gov
Cc:	gilmourc@si.edu; borem@usgs.gov
Subject:	SFER 3B sulfur comments
Date:	Tuesday, September 23, 2008 6:31:27 PM

Dan,

This text as in the 2009 SFER Chapter 3:

The USEPA has not issued any guidance regarding a water quality criterion for sulfate, and thus the state of Florida has no sulfate water quality criterion. The Comprehensive Everglades Restoration Plan (CERP) goal for sulfate in surface water is 1 mg/L. By comparison, background sulfate in the Everglades may be ≤ 0.1 mg/L (Scheidt and Kalla, 2007; Weaver et al., 2007).

At the CERP goal of 1 mg/L sulfate in Everglades surface water, data indicate that microbial sulfate reduction and MeHg production rates would be low due to sulfate limitation, and sediment porewater sulfide levels would only be in the tens of µg/l, minimizing both sulfide toxicity to aquatic plants and animals and internal eutrophication - phosphate and ammonium release from sediments (Gilmour et al., 2007a, b). Surface water sulfate concentrations above 1 mg/L are evident in about 60 percent of the total area of freshwater Everglades marshes (Scheidt and Kalla, 2007).

elicited this response from Tom Debusk:
What is not well understood is the impact, if any, of these elevated sulfate concentrations on MeHg production, wetland P retention, and health of aquatic biota. The implication from page 3B-18 is that extremely low surface water sulfate levels are required to minimize potential adverse effects of sulfate. The Chapter 3B authors state: "At the CERP goal of 1 mg/L sulfate in Everglades surface water, data indicate that microbial sulfate reduction and MeHg production rates would be low due to sulfate limitation, and sediment porewater sulfide levels would only be in the tens of µg/L, minimizing both sulfide toxicity to aquatic plants and animals and internal eutrophication – phosphate and ammonia release from sediments (Gilmour et al., 2007 a, b)."

Note I never said that 1 mg/L sulfate in Everglades surface water should be considered a water quality criterion. It is the CERP goal, and could be considered a "no adverse effect concentration".

Any comment on the CERP goal?

You have to wonder who asked Dr DeBusk to write this response to Chapter 3B. As DeBusk is under contract to the SFWMD, and I collaborate with the SFWMD (Mark Gabriel is a co-author on the Chapter), isn't this response from DeBusk "friendly fire"?

Don

Donald M. Axelrad, Ph.D.
Florida Department of Environmental Protection
Office: (850) 245-8072
Mobile: (850) 443-4626