To: Poleck, Thomas[poleck.thomas@epa.gov]
From: Christine M Wagener
Sent: Thur 2/28/2013 7:18:15 PM
Subject: Re: Recap of meeting with MPCA/UMD on wild rice studies

Tom,
Thanks for this. I agree w/ Dave, & reiterate MWatkins concern re funding. I must have just left for airport when they met yesterday.

In mtg now. Will catch up w/ you soon.

CMW

On Feb 28, 2013, at 10:24, "Poleck, Thomas" <poleck.thomas@epa.gov> wrote:

This includes my response to Linda to Dave Mounts email to you.

From: Poleck, Thomas
Sent: Wednesday, February 27, 2013 3:55 PM
To: Holst, Linda
Cc: Wagener, Christine; Pfeifer, David
Subject: RE: Recap of meeting with MPCA/UMD on wild rice studies

Thanks Linda. Dave Mount ends on a rather important note. He's basically saying that by the end of the planned studies they might have enough data to know if the sulfate criterion value is reasonable or in the ball park, but to derive the "right" number for sulfate, longer-term studies are needed yet are currently not planned or funded. Obviously something for us to keep in mind and discuss further since the scientific basis for, and our approval of, any revised criterion will have to be close to bullet-proof given the importance and interest in this particular standard.

From: Holst, Linda
Sent: Wednesday, February 27, 2013 3:08 PM
To: Pfeifer, David; Poleck, Thomas; Mayo, Kathleen; Horak, David; Cozza, Daniel; Swenson, Peter; Pierard, Kevin
Subject: Fw: Recap of meeting with MPCA/UMD on wild rice studies

FYI
Sent by EPA Wireless E-mail Services

From: Mount, Dave
Sent: Wednesday, February 27, 2013 2:23:15 PM
To: Wagener, Christine
Cc: Holst, Linda; Hoff, Dale; Erickson, Russell; Richards, Carl
Subject: Recap of meeting with MPCA/UMD on wild rice studies

Hello Christine—

Though we should touch base following our meeting with MPCA and UMD staff on the wild rice studies.

We met primarily with Ed Swain and Phil Monson from MPCA, and John Pastor, Brad (Martin?), and Nate Johnson from UMD, the latter three being the primary researchers from the University working on the wild rice project.

We toured the laboratory facilities where they are doing sediment column and laboratory toxicity tests. The sediment core studies are just getting underway. The laboratory hydroponic studies have undergone significant method development and appear poised to generate useful data.

There are three main thrusts to the research, field surveys, constructed outdoor mesocosms (stock tanks), and lab toxicity studies. Sediment chemistry studies are also ongoing, though generally linked to either the field survey or mesocosm work. The lab studies thus far have only examined direct effects of sulfate (as opposed to sulfide). Some effects on early shoot development have been documented, with the onset of effects in the 10 to 100 ppm sulfate range. That said, the direct toxic effects of sulfate were observed only at a certain developmental stage (early shoot elongation) and not at others. In partial response to this, the researchers are working on developing an laboratory exposure procedure that spans from germination though emergent plant development (as opposed to multiple assays focusing only on certain life stages) so that the cumulative effects (if they occur) of exposure through this period can be documented.

The mesocosm studies involve additions of sulfate, but because they have an active

sediment layer these sulfate additions lead to sulfide production. Peeper studies on the sediment indicate that sulfate additions to the overlying water are producing a gradient of sulfide concentrations in the sediments. Interpretation of the mesocosm data are complicated because the mesocosms are only now (after two growing seasons) developing the sediment biogeochemical conditions that one might expect in a natural rice bed (e.g., stabilization of sediment composition and chemistry, buildup of a "straw" layer of vegetative material from previous years). There is some uncertainty about whether there will be funding to continue the mesocosms this or future years.

I think Dale, Russ, and I were in agreement that all three areas of study (plus the sediment chemistry) are yielding useful information and there is merit to continuing each of them. This is notable given the current concerns over whether funding will be available to support continuation of the mesocosm studies. It is probably unrealistic to hope that enough research progress can be made on the short available timeframe (ending Dec 2013 as we understand it) that the data from this project will be able to arrive at a firm understanding of what the "right" number is for a sulfate standard to protect wild rice, but we have some confidence that the planned work could provide a basis to assess whether the current 10 mg/L standard is reasonable or unsupportable.

Let us know if you have questions.

Dave