

Minutes from Kerr 216 Water Quality Task Group Meeting -- November 7, 2003 – Raleigh

Attendance: Frank Yelverton, Jennifer Everett, Tom Augsburger, Sara Ward, Martin Lebo, Jean Richter, Aduagna Kebede, Jerad Bales, Boyd DeVane, Joe Hassell, Pete Kornegay

Session I

Introductions were made from all participants as well as overviews of individual expertise and backgrounds. Frank opened up the meeting with some housekeeping issues pertaining to the Team Leader meeting that was held in October. He passed out handouts of the Tasks Summary document, the 3 Phase Study Review sheet and the Project Delivery Team sheet. He pointed out the Project Delivery Team is a diagram flow and can be very fluid. Frank indicated what the groups and team leader's responsibilities are as they pertain to the study and subsequent reporting to the Executive Committee (EC). Frank passed out handout of the 'proposed' schedule and where we are in the schedule. We are to begin (Phase I) in November and finish in May 2004 is the general guideline. May/June '04 we are to begin Phase II, the feasibility phase. Approval to the Atlanta office is June 2006.

Sara (or Sarah?) Ward with USFWS will need to be put on the Listserv for she has joined the WQ task group. Tom will help her get on the list.

Jean -how free are we to bring in Subject Matter Experts (SME) to meetings.

Frank- very free, anytime you feel you (we) need to bring in someone, then do so.

Jennifer- find out when/if the SME will need to be reimbursed for services prior to doing work or attending meetings. We'll need to know about these costs ahead of time.

Session II

Review of the PMP.....Water Quality tasks.

The Water Quality task group has 3 tasks, A through C.

Jerad – what's the difference between A and B? Combine them?

Jean – the tasks were made from comments during the relicensing process

Pete – the focus was to get at the floodplain WQ – flooding & hydropeaking.

Frank – directed group to look at task B, - 2.B.1

Jerad- Task B – is related to NPDES permitting.

Jennifer – we have an assimilative capacity issue and a floodplain issue.

Pete – to assure the model can be linked to reservoir model. Try to get an all-encompassing model.

Frank – is it feasible to have one encompassing model (3D) or all separate models. Separate being 1) assimilative capacity model or 2) floodplain model.

Jerad – low flow in channel conditions- needs a separate, not as complex model. The RRBROM model is more complex.

Tom – run 7Q10 flow modeling, historic modeling.

Frank – seems to be some link between models

Martin – backswamps add major change in complexity.

Jerad – the current model only goes to Hamilton. Perhaps have an unsteady and multidimensional model, which goes to the mouth. DWQ needs to consider swamp drainage and how they'll permit.

Tom – worst-case condition, any margin of safety factors as baseline- refine low DO worst case scenarios.

Frank – 7Q10 is low flow—minimum release is 1500 cfs.

Tom or Jerad? – Can't use high temps with low flow, for example in November, they don't exist.

Jerad – extend model to the Sound to look at density stratification.

Martin – same model should be used for both conditions unless time constraints would interfere.

Jerad – using a 3 dimensional model to include the density.

Frank- have 2 models – 2 simpler models instead of 1 complex expensive model.

Jerad – have a point source model and a floodplain model. DWQ model does predict the DO sag.

Pete – an approach as the 7Q10 model only will just miss the point of the effects of the influence of the swamps. Have to factor in the backswamps.

Tom – Let's make some explicit questions into a mix and find commonality.

Jerad – management and regulators decisions need to be adding input and purpose to a decisions and actions.

Frank – 3 models. 1) wholistic – 3D or hybrid 2) assimilative capacity 3) floodplain
Need to look at alternatives – list costs and limitations for all 3 models.

Martin – wholistic vs. floodplain model. The floodplain model would not have a density aspect.

Pete – let modelers decide what products we need.

So from there it was decided to begin formulating questions that the modelers would need answers to

Session III

The group formulated general, raw questions. A total of 33 questions were produced. The numbered questions were then grouped into one or two of 4 categories. The 4 categories are related to tasks outlined in the PMP and they are; Assimilative Capacity, Floodplain, Reservoir (tailwater, Lake Gaston, Roanoke Rapids Lake) and General Information.

After the meeting, Jean Richter typed up the raw questions and the groups' work on categorizing the questions. She also consolidated the points with one main point per topic and pertinent sub points following. It will be up to the group to decide if the consolidation is correct and then to prioritize the points.

Next meeting, Frank will be setting meeting date, the task group will identify existing data/modelers' needs.

Summary of Brainstorming session

(Numbers next to questions and statements correspond to the numbers from the flipchart assigned at the meeting. Questions in bold print were recognized as broader questions with more concise questions after.)

1. What aspects of dam operations need to be linked to the model?

How does quality and quantity of water coming from the dam influence water quality downstream. (2)

What are the water quality releases from Kerr? (14)

Does the model need to be extended in Gaston and Roanoke Rapids reservoirs? (15)

3. How do step down increment releases from the dam affect water quality downstream (DO)?

In what quantity should step down increments be made? (4)

Why doesn't the DO sag always flush out? (6)

How does seasonality affect ramp down? (25)

What is the optimum release range to achieve desired DO concentrations at various points of the river? (33)

11. At what point does the duration, quantity and extent of water on the floodplain impact DO in the river?

Why doesn't the DO sag always flush out? (6)

How do peaking operations affect model? (8,000 cfs) (9)

What are the minimum and maximum in stream flows needed to protect DO levels? (taking into consideration inflows from the floodplain) (19)

At what transition flow will Dominion begin peaking operations? (22)

What is the optimum release range that would mimic natural conditions? (24)

18. What is the assimilative capacity of the lower Roanoke River?

What are the worse case scenarios that need to be looked at for assimilative capacity? (need to consider temp, flow, DO and backswamp drainage when examining this question). (12)

Obtain assimilative capacity for future industry and other uses. (32)

27. What is a reasonable expectation of DO levels on the floodplain?

Is there any time of year where DO is not a problem? (temperature) (23)

At what times is DO depression a problem on the floodplain but not in the river. (26)

General Information and preliminary data needs:

Other than DO, what other parameters should be measured? i.e. temperature, nutrients, chlorophyll-a?(5)

Need higher resolution- duration, topography, floodplain and river. (13)

What is the status of turbine venting at Kerr? (16)

What is the status of the DO gage downstream of Kerr? (17)

How would changes at Kerr affect the FERC license? (21)

Does the model need to extend into the Albemarle Sound? (28)

Land use data to backswamps- Are the majority of the tributaries draining agricultural and/or forest land? (29)

Is floodplain water quality linked more to the river or surrounding land uses? (30)

Future issues- Growth (31)