

## Child, Ralph

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**From:** Reynolds, John P. [john.reynolds@mirant.com]  
**Sent:** Thursday, May 01, 2003 11:26 AM  
**To:** Bruce Davis; Charles B. Cooper (E-mail); Child, Ralph; Cowden, Norm C.; Howard Shelnett; Kristy A. Niehaus Bulleit (E-mail); Shawn Konary  
**Subject:** FW: Follow-up question on Eutrophication documentation and Model Calibration/Validation

FYI

-----Original Message-----

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**Subject:** Re: Follow-up question on Eutrophication documentation and  
Model Calibration/Validation

Dear John and Charles River Eutro Modeling group:

Please excuse the lack of clarity in my previous message. The following should clear things up. A portion of the data from the period 1998 -2002 will be used to calibrate the model. The remainder of the data ( data from periods other than the calibration period) will be used to verify the model. In general, the most robust data sets are being used for calibration. For water quality - the 2002 summer season will be used for calibration; for salinity - the 1998 - 1999 period will be used for calibration, and for temperature 1999 will be used for calibration.

What you can all expect for the upcoming June 10 meeting is the model calibration results. The documentation that will be provided will cover model development and calibration results. The error analysis will be conducted following the verification of the model and will be presented in the final model documentation report later this year.

Please let me know if you have any questions.

Mark

Mark Voorhees

To: "Reynolds, John P." <john.reynolds@mirant.com>  
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Subject: Re: Follow-up question on Eutrophication  
documentation and Model Calibration/Validation  
(Document link: Mark Voorhees)

Dear John,

Thanks for your message. We appreciate the time that Mirant is investing in reviewing the model development for the Basin. The detailed review will surely benefit the project as a whole.

The documentation concerning the application of the EFDC model to the Basin and assumptions used will be provided in the model documentation reports that will be prepared by the modeling contractors (Numeric and Tetra Tech) and distributed prior to the June 10th meeting. We hope to provide those reports as soon as is possible. Our goal is for members of the group to have at least two weeks of review time before the meeting.

I can clarify our intended plans for model calibration and verification. Data from the period of 1998 through 2002 will be used to calibrate and verify the model. This period encompasses a variety of conditions that are suitable for model calibration and verification. A review of the model's performance for this period should be sufficient to evaluate whether the model is suitable for TMDL development.

Please call or EMail me if you have any additional questions.

Mark

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Subject: Follow-up question on Eutrophication  
documentation and Model Cali bration/Validation

Mark,

Thanks for providing us with some of the background documentation for EPA's ongoing Charles River eutrophication TMDL modeling effort. There are a couple of key items emerging from our review that we wanted to pass along without delay.

First, we appreciate the original background information and data files, but are keenly interested in receiving documentation of the customized setup and assumptions being used for the present application.

Second, we have a question about how EPA plans to use the available Charles River field data to calibrate and validate the model. Specifically, it is unclear whether EPA plans to use some of the 1998-2002 data to set up and calibrate the model and the rest of those data for validation, or whether EPA plans to use all the data for calibration and leave the validation step for data to be collected from later years.

Mirant believes that the former course is both the conventional practice and needed here because it allows the agencies and other interested parties to understand from the outset how well the model simulates measured field data that are independent of the data used for calibration. The validation can be readily accomplished for this modeling effort in the near-term, but only if the modeling effort uses a portion of the field data for calibration and then performs error analysis to see how well the modeling simulates the rest of the actual field data.

Please clarify EPA's approach on this topic at your earliest opportunity.

Thanks in advance for your consideration.