



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
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DEPARTMENT OF  
ENVIRONMENTAL QUALITY  
BOISE REGIONAL OFFICE

March 5, 2014

Mr. Troy Smith

Boise Regional Office  
Idaho Department of Environmental Quality  
1445 N. Orchard  
Boise, ID 83706-2239

Dear Mr. Smith:

This letter responds to your email after the 2/26/14 Technical Advisory Committee meeting for the Lower Boise River TMDL AQUATOX modeling effort. You have asked for our perspectives of the model calibration and model report, including:

- The quality and transparency of IDEQ's model calibration process and report documentation
- The overall quality, usefulness, or other description of IDEQ's final model calibration
- Any specific strengths or weaknesses of IDEQ's final model calibration

While these comments pertain to the model calibration efforts by the IDEQ personnel in conjunction with the WAG Modelling Workgroup, they should not be construed to imply final approval of the TMDL and/or application of the model in TMDL development. How this model is to be used in the development of the final TMDL document remains to be seen and will be commented on when appropriate.

Regarding the transparency of the model it is the opinion of Ben Cope and myself that IDEQ has conducted an excellent model development process. IDEQ has consulted with a strong technical advisory group comprised of the AQUATOX model developers, several consulting engineering firms, some personnel from the municipalities in the watershed, USGS and EPA. IDEQ has held numerous meetings to discuss each step in model development and has responded diligently to all feedback from the advisory group members. Technical decisions made during the modeling meetings were discussed at length, alternatives were discussed and everything was documented on an FTP server maintained by IDEQ for all members of the workgroup to access. Reasonable effort was expended to reconcile the model results with field data in this model with good results. We have rarely seen more transparency or public involvement in the development of a water quality model than in the calibration effort of the AQUATOX model on the Lower Boise TMDL and the calibration seems reasonable and adequate to us.

Our position on the AQUATOX model calibration report documentation is that it provides a reasonably thorough description of the key inputs and assumptions of the model. There were numerous meetings and opportunities to comment and discuss the model documentation report. EPA has offered comments and suggestions on multiple draft reports, and IDEQ has been responsive to our concerns at each stage in the process. Agreement on the documentation report seemed to be a consensus of the workgroup leading up to the TAC meeting, but one workgroup participant raised concerns at the meeting that appeared to be more policy related than technical in nature. If technical questions remain on the calibration report then the time is now to clearly articulate them so this project can move forward. Regarding the overall quality and usefulness of the model, we believe the model is ready for use in TMDL analysis, with a recognition of the uncertainties in the model representation of periphyton growth in the river.

As I have stated before, the AQUATOX model is a very complicated model to employ for the development of a TMDL for phosphorus. It is very labor intensive and has required tremendous amounts of time from very talented people. This notwithstanding, one must remember that we are trying to simulate complex interactions between nutrient supply and multiple types of periphyton. With present knowledge and technology it is impossible to perfectly mimic all of the conditions and results which occur in the natural system of the Lower Boise River. We are satisfied that IDEQ has done a reasonable job of calibrating AQUATOX for this TMDL project. We believe that the model as calibrated could be a very useful tool in the development of the Lower Boise River Total Phosphorus TMDL if properly applied. The model is not perfect and over predicts in some locations and under predicts in others but there will always be some error ("noise") in a model. IDEQ has worked hard to make the model as accurate as possible.

In conclusion, in my 13 years of working on TMDLs in Idaho I have never seen more effort put into modeling a watershed. This project has been going on for many years and it is way past time to move things forward toward completion of this TMDL. If there are still nagging problems in someone's mind with the use and calibration of the AQUATOX model for the Lower Boise River, it is time to clearly state them, consider them fully and move on with this project. The EPA NPDES Permit Program is moving forward with the development of permits for dischargers in this valley in the absence of a comprehensive analysis of phosphorus impacts. There is tremendous interest in having a strong scientific basis for permit limits and potential use of water quality trading in the valley. The path forward to get these answers is a completed and approved TMDL.

Sincerely,



William C. Stewart  
Environmental Protection Specialist  
U.S. Environmental Protection Agency

cc: Ben Cope                      Lance Holloway  
David Croxton                    Pete Wagner