

## BMW pH IMPLEMENTATION MEETING

October 26, 2009

Brown and Caldwell

Meeting Notes

### Attendees:

Terry Baus  
Blair Corning  
Jim Dorsch  
Sarah Reeves  
Dennis Stowe  
Amy Woodis

Discussed different types of TMDLs and Implementation Plans. The group agreed that we need to have a Phased (pHased) TMDL with Adaptive Implementation. Should be phased because there is uncertainty about a number of underlying assumptions in the TMDL. Implementation should be adaptive because it makes sense to adapt based on the results of implementation of treatment/BMPs/or studies. In the report from this group, we will need to give more detail on why this is appropriate for the pH TMDL.

In each phase, identify treatment changes, plans for studies and schedule. How/when will we adjust TMDL?

### PHASE I (Through 2014)

Studies

BNR at Metro

Use Attainability Analysis (better define the uses)/Site-Specific Standard studies and information collection

### Phase I – Unknowns/Questions That Need To Be Answered

- Can we express TMDL in pH rather than Phosphorus?
- What is happening when we see pH low at pumps and high when the water hits Barr (or vice versa)?
- What is background?
- Is it feasible to move from hypereutrophic to mesotrophic? How about just eutrophic?
- What is role of nitrogen in the system?
- What happens once nutrient removal begins at Metro? (Expect compliance schedule for BNR in permit renewal in 2013. \*Expect P=1 and N=5.)
- What happens once nutrient removal begins at limit of technology for the WWTPs?
- How much Phosphorus can we remove from stormwater?
- What is role of internal load in the lake?

Other Uncertainties

- Pumping
- Alkalinity
- Limnocorrals
- Rapid infiltration basins

**PHASE II**

Use data from studies to develop Site-Specific Standard that includes feasibility and use this to revise TMDL.

Final TMDL date: \_\_\_\_\_

Expected full treatment in place to meet final TMDL: \_\_\_\_\_

**NEXT MEETING DATE**

**Monday November 2<sup>nd</sup> at 1:30 pm at Brown and Caldwell** – We will be working more on the unknowns/studies and possible dates, etc.

## BMW pH IMPLEMENTATION MEETING

November 2, 2009  
Brown and Caldwell  
Meeting Notes

### Attendees:

Blair Corning  
Jim Dorsch  
Sarah Reeves  
Steve Lundt  
Amy Woodis  
Laurie Rink  
Barb Biggs

Phased TMDL because there is uncertainty (in support of type iii temporary modification). Assuming Phased TMDL is appropriate we need to make sure it meshes with EPA's requirements. Need to have EPA comfortable with our approach. The Division has said over the past year that they are not in support of a phased TMDL – phased implementation is appropriate. At some point we need to engage EPA. Joanie has been talking to EPA and asking for their initial impression of the pH TMDL. We do want to meet with the EPA directly and not filter through the Division. This needs to go through the Board for their consensus.

**Laurie Rink** will call or email Division and let them know that we are working on options for Phasing/Adaptive implementation that we are going to discuss at our November BMW Board meeting. We would like for them (and EPA) to attend with an open mind and participate in the discussion.

Need to find examples where EPA has approved phased TMDLs. **Amy Woodis** and **Blair Corning** will do some research to find such approved TMDLs.

**Sarah Reeves** will take shot at coming up with introductory language about why we want Phased TMDL with Adaptive Implementation – attach 2006 memo. Need to also be clear that we are going to have TMDL completed per the existing schedule. The idea of the Phased TMDL is to develop it to meet the standard.

### **PHASE I (Through 2014)**

Studies

Evaluation of BNR at POTWs

Use Attainability Analysis (better define the uses)/Site-Specific Standard studies and information collection

Additional Temporary Modification studies needed by Division to resolve uncertainty

### **Phase I – Unknowns/Questions That Need To Be Answered**

- Can we express TMDL in pH rather than Phosphorus?

- What is happening when we see pH low at pumps and high when the water hits Barr (or vice versa)?
- What is background?
- Is it feasible to move from hypereutrophic to mesotrophic? How about just eutrophic?
- What is role of nitrogen in the system?
- What happens once nutrient removal begins at POTWs?
- What happens once nutrient removal begins at limit of technology for the WWTPs?
- How much Phosphorus can we remove from stormwater?
- What is role of internal load in the lake?
- What should breakout be for the Wasteload?
- What impact will state warm water lake nutrient standards have on the TMDL?
- What roll does alkalinity play in Barr and Milton Reservoirs?
- Investigate in-canal treatment.
- Limnocorrals to test changes in water quality/treatment.
- Will pumps be turned back on? What impact will this have long-term? May need to alter TMDL based on the outcome.
- Rapid infiltration basins for treatment.
- Stormwater BMPs for nutrient removal.

## **PHASE II**

Use data from studies to develop Site-Specific Standard that includes feasibility and use this to revise TMDL.

Updated TMDL date: December 2020. Date was chosen because South Platte Triennial Review is June 2020 and will need to make any changes in Regulation 38 associated with results from Site-Specific Standard development and/or UAA work.

## **IMPLEMENTATION PLAN**

Detailed plan about how we are going to answer all the questions in Phase I and how it will be adaptive.

**BMW pH IMPLEMENTATION MEETING**  
**December 7, 2009**  
**Brown and Caldwell**  
**Meeting Notes**

**Attendees:**

Blair Corning	Sarah Reeves
Jim Dorsch	Laurie Rink
Mary Gardner	Shelley Stanley
Steve Lundt	Dennis Stowe
Jill Piatt Kemper	Amy Woodis

**Group Objective** - The group is now going to work on structuring the TMDL as a phased TMDL and developing the implementation plan.

**Schedule**

**2009**

December 17 Implementation Plan Breakout Group meeting

**2010**

January 6	TMDL Breakout Group meeting
January 11	Revised TMDL from AECOM
January 12	BMW pH Implementation Subcommittee meeting
January 26	BMW Board Meeting – provide update on status of our work and plan forward
February __	BMW pH Implementation Subcommittee meeting
February 23	BMW Stakeholders meeting – provide update on status of our work
March __	BMW pH Implementation Subcommittee meeting
March 23	BMW Board Meeting – provide update on status of our work and discuss outstanding issues/provide options for addressing issues.
April 1	<b>Deadline</b> – Internal Draft Phased TMDL and Implementation Plan
April __	BMW pH Implementation Subcommittee meeting
April 27	BMW Stakeholders meeting – present to Stakeholders
May __	BMW pH Implementation Subcommittee
May 25	BMW Board meeting
June 1	<b>Deadline</b> – Final Draft Phased TMDL and Implementation Plan to Stakeholders
June __	BMW pH Implementation Subcommittee meeting
June 22	BMW Stakeholders meeting – Thumbs Up approval of Phased TMDL and Implementation Plan
July __	BMW pH Implementation Subcommittee meeting

July 27 BMW Board Meeting  
July 31 **Deadline** – Phased TMDL and Implementation Plan (possibly still draft) to Division.

### TMDL

- All comments provided on the TMDL have been given to AECOM.
- There is no money left to run the model anymore for the TMDL.
- Changes to the TMDL will be made based on comments and AECOM will provide a revised TMDL by January 11, 2010.
- Need more data/information to support target of 0.1 mg/L total phosphorus. The BMW Technical Committee will address this.
- **To do:** Develop outline for how Phased TMDL should be organized and identify where we have holes or where more information/language is needed in the current draft. Use Phased TMDLs we have found. Inquire with EPA about an example.
- Breakout group members – **Jim Dorsch, Amy Woodis, Blair Corning, and Sarah Reeves.**
- **Next meeting of TMDL Breakout Group - January 6, 2010, 9 a.m. at Brown and Caldwell.**

### Implementation Plan

- Include allocations specific to sources in the implementation plan.
- **To do:** Outline Implementation Plan.
- Breakout group members – **Steve Lundt, Laurie Rink, Dennis Stowe, Sarah Reeves.**
- **Next meeting of Implementation Plan Breakout Group - December 17, 2009, 12:30 p.m. at Stockyard Saloon** (4710 National Western Dr. (303) 298-0525)

**Next meeting of BMW pH Implementation Subcommittee – January 12, 2010, 9 a.m. at Metro.**