

# DEQ Nutrient Work Group

## 18th Meeting Summary

### July 23, 2012

#### Introductions

A list of the members of the Nutrient Work Group (NWG) and others in attendance is attached below as Appendix 1.

#### Agenda

- Review of the April 5, 2012 Meeting Summary
- Discussion with Richard Opper and George Mathieus
- Public Comment
- Next Meeting

#### Review of the April 5, 2012 Meeting Summary

NWG members present at this meeting had no comments on the April 5 meeting summary.

#### Discussion with Richard Opper and George Mathieus

Director Opper began the discussion noting that while Montana is not the leader among the states in developing nutrient standards, it is the leader in developing creative strategies to implement them. Montana's approach to implementation has three objectives: acceptability to dischargers, water quality improvement, and progress towards meeting water beneficial uses. The effort to develop the numeric nutrient standards and the accompanying implementation strategies is for the benefit of Montana water users, not for DEQ. If DEQ is not successful, EPA will take over. The remaining big issue is how to apply nondegradation to the nutrient standards.

DEQ intends to proceed with rule making at the September 28, 2012 Board of Environmental Review meeting.

George Mathieus provided an overview of issues relating to the standards and their implementation. A summary of these issues and the discussion follows.

Timeline - On July 6, 2012, DEQ legal staff began reviewing the [draft rule package](#) that was posted on the NWG web page prior to this meeting. Substantial changes to the documents in the package can be made up until they must be sent to the members of the Water Pollution Control Advisory Council (WPCAC) on August 13. ***NWG participants should send comments on these documents to George Mathieus by close of business on Monday, August 6.*** Mr. Mathieus' contact information is: 406-444-7423 and [gmathieus@mt.gov](mailto:gmathieus@mt.gov). Rule making by the DEQ and the Board of Environmental Review (BER) will begin with the BER meeting on September 28, 2012. The rule making process will then proceed for six months. The process may include public hearings held in conjunction with or separate from pre-scheduled BER meetings. The BER will conduct rule making regarding Part A of DEQ Circular 12 (DEQ-12), which addresses the numeric nutrient standards, and the DEQ will conduct rule making regarding Part B of DEQ-12, which addresses variances from the standards.

*Question - How will the BER/DEQ rule making process work?*

Answer by John North - The standards and their implementation including variances may be addressed as a package with a joint hearing process or through separate hearing processes. If the joint process is followed, the rule making notice would be signed by the Chairman of the BER and the DEQ Director. Comments on the proposed rules would be addressed separately by the BER and the DEQ whether the hearings are held jointly or separately.

*Comment - I am concerned about the possibility that the standards would be adopted but the implementation process including variances would not. I prefer that the standards have a non-severability clause to prevent this outcome.*

Answer - We will ensure that standards will not be adopted without the implementation process including variances.

*Question - If both the standards and an implementation process must be adopted, wouldn't it make sense to adopt Part B of DEQ-12 first?*

Answer - Both will be discussed at the same time.

*Question - Shouldn't the DEQ discuss how to proceed with the BER Chairman?*

Answer - We must be clear about how the complete rule making package fits together. We will discuss this with the BER Chairman.

Instream vs. End-of-Pipe - The nutrient standards are instream, not end-of-pipe. This creates diverse situations for dischargers. Permittees that discharge small amounts into large streams will be at an advantage compared to those with large discharges into small streams. Some dischargers such as Missoula may meet standards so that no variance will be needed. If as is likely, the phosphorus standard for the Clark Fork River is lowered, Missoula may be able to meet it without significant new investment in infrastructure by fine tuning treatment plant operations.

*Comment - Even if instream standards are met so that a variance is not required, the discharger would still have to get a permit with an effluent based, end-of-pipe discharge limitation.*

Response - Correct.

*Question - Does DEQ-12 require using the 95<sup>th</sup> percentile of water quality upstream of the discharge?*

Answer - No, the circular only requires the use of the 95<sup>th</sup> percentile to statistically evaluate the effluent data. Permit writers have latitude to select the best statistics to characterize the water quality upstream of the discharge; we have used the 75<sup>th</sup> percentile in an example we will provide and this is a typical value permit that the permit writers use.

*Question - What about 303(d) listed streams?*

Answer - If streams are not meeting water quality standards, no dilution is available. Variances would be needed for every discharger for the listed streams.

*Question - If meeting the standard would require a permit, how would the permit be written?*

Answer by Jenny Chambers - At the December NWG meeting, I provided examples of how permits would be written. My examples are available on the NWG web site.

*Comment - The December examples were useful but probably are not adequate for the general public to understand how the effluent based, end-of-pipe discharge limitation is set.*

*Comment - Going through the Missoula example in detail would be useful.*

Response - We will consider the Missoula example later in this meeting. It would also be useful to provide an example for a lagoon, small package plant, and a new or increased discharge. Whitefish or Deer Lodge might be good examples.

*Question - How are TMDLs addressed in permits?*

Answer by Jenny Chambers - TMDLs set discharge limits for point sources and load allocations for non-point sources. The point source waste load allocations are incorporated in the permits.

*Question - How would variances be addressed in the point source discharge limits?*

Answer by Jenny Chambers - The permits would include a discharge water quality standard target, the variance if applicable in the interim, and a compliance schedule.

*Question - Will all permits after the nutrient standards are adopted include a compliance schedule with the 20-year variance as boiler plate?*

Answer by Jenny Chambers - Yes, it will be included for every permit for which a variance has been issued, if requested and applicable.

*Comment - Section 2.1 of Part B of DEQ-12, the wastewater facility optimization study, addresses public facility permittees. Language should be added to this section also addressing private facility permittees.*

Response - We agree and would appreciate proposed language to do so.

*Comment - Our comments will propose language.*

20 Year Variance Duration - DEQ has been asked why the variance has a 20 year duration. The duration relates to how waste water facilities are planned and built. Section 2.0 of Part B of DEQ-12 requires the department to review the general variance requirements every three-years so that variances can be modified to reflect advances in the availability and affordability of control technologies.

*Question - If control technology does not improve and become more affordable, must permittees meet the standards in 20 years?*

Answer - No. EPA directs that a variance be allowed based on the limits and affordability of technology. If after 20 years, affordable technology does not exist to allow compliance, then the variance may be continued, or the standards or the beneficial uses may be changed.

*Comment - 20 years is a long time. We need to think about standard compliance not evasion.*

Response - DEQ's goal with the variances is to buy time to allow technology to improve and get cheaper. The goal is not to provide a get-out-of-jail-free card.

*Comment - I continue to be concerned that DEQ has not analyzed reasonable alternatives on the prevention side as opposed to the treatment side. Examples of prevention alternatives that may*

*result in cheaper improvements to water quality include building codes, xeriscaping, and composting toilets. These alternatives may spark creativity. I believe that DEQ is under a legal obligation to analyze prevention alternatives. Judicial action may be needed to ensure that DEQ meets this obligation.*

Response - SB367 which creates the general variance is focused on treatment technology-based improvements to water quality. However, DEQ has made progress outside of the treatment box via gray water reuse legislation, nutrient trading and the phosphorus ban. We need the water quality tool box to include treatment technology and other options.

Response by Richard Opper - Regulation drives technology. Controlling mercury emissions from coal burning power plants is a good example. DEQ sets goals; it does not prescribe how to achieve the goals. DEQ's legal obligation is to protect water quality, not to specify mechanisms for doing so.

*Comment - DEQ should keep its eye on the water quality improvement goal and not muck up the standards with prescriptions for how to do so.*

Watershed Approach - By watershed, DEQ means the watershed of the receiving water body.

*Question - Does this mean the area in the watershed above the point in which the treatment plant discharge enters the stream or the entire watershed?*

Answer - The latter.

Lagoons - Not all lagoons are created equal with respect to the nutrient standards. Lagoons that are not designed to treat nutrients must maintain their treatment performance. Lagoons that treat nutrients must follow permit and variance processes.

*Question - Must a lagoon that does not discharge to surface water be permitted?*

Answer - If no discharge occurs to surface water, a surface water discharge permit is not required. For example, the Belgrade lagoon discharges to ground water and does not need a surface water discharge permit. It is subject to ground water standards, and does need a ground water permit. The water quality standards we are discussing are applicable to surface water only.

*Question - Can mechanical treatment add-ons be required for lagoons to meet nutrient standards?*

Answer - Yes; however, options short of mechanical treatment may be available. An individual variance from the nutrient standards may also be appropriate.

*Question - Must new discharge permits for lagoons consider ammonia?*

Answer - Yes; however, a permit may not have a effluent limit for ammonia if there is no reasonable potential to exceed the water quality standard for ammonia.

*Question - Will nitrogen removal be required because of ammonia standards?*

Answer - Permits may require that ammonia, nitrates, and nitrites be addressed because there are separate water quality standards for them. We may need to clarify the definition of lagoons designed to remove TN and/or TP when the general variance applies.

*Comment - The Department of Commerce (DOC) is reviewing grant applications for lagoon systems that must treat for ammonia because of toxicity. Ammonia is not included in TMDL waste load allocations. Ammonia treatment requirements may make TN and TP treatment unaffordable.*

Response - TMDL waste allocations depend on the dilution capacity of receiving streams.

*Question - Could a permittee seek a split variance for TN and TP, using a lagoon to treat TN and mechanical treatment for TP?*

Answer - Yes.

Other Issues - Mr. Mathieus asked about other issues that he did not address.

*Comment - We need a general understanding of how the process would work for multiple dischargers.*

*Comment - I do not understand the application of the non-degradation rules to nutrients.*

Response - The issue is how to apply a percentage reduction to a small number. EPA is addressing non-degradation and nutrients at the national level, and there have been federal court cases on this subject. DEQ does not have a silver bullet for the non-degradation issue. I propose that we meet with a small number of representatives of industry and other interested parties to develop a proposal to address non-degradation and nutrients.

*Comment by Richard Opper - Non-degradation is an issue that we will not solve today.*

*Comment - Dischargers are reluctant to go to the BER to ask for permission to degrade water quality.*

Response - Non-degradation is an MPDES permit issue, not a BER issue.

*Question - Why the reluctance to seek an authorization to degrade above the non-degradation limit?*

Answer by Doug Parker - Seeking approval to degrade attracts attention. Ultimately, we believe the decision to approve a degradation would be political and therefore risky.

*Comment - The League of Cities would like clarification of adaptive management and how significant environmental impacts would be determined at a watershed level.*

Rule Cleanups - Mr. Mathieus stated that DEQ will make changes to the rule package the following areas. The existing package is posted on the NWG web page at:

<http://www.deq.mt.gov/wqinfo/NutrientWorkGroup/default.mcp>

- Adding non-severability language;
- Clarifying how TN and TP would be addressed separately in the general variance;
- Fleshing out the language about how the TMDL watershed approach will work, including the meaning of a no net impact on the environment; and
- Clarifying how the variance process will work so as not to increase the permitting work load.

DEQ will post the changes using a track changes format on the NWG web site by August 10.

Mr. Mathieus asked meeting participants to identify other provisions of the rules that need clarification. The participant responses included the following.

- DEQ-12 and the process by which individual variances are determined need to go beyond the 1995 EPA guidance for private dischargers.
- Clarification is needed about whether the Montana Department of Natural Resources and Conservation (DNRC) water right rules can trump DEQ rules regarding reuse of gray water.
- The 1% median household income (MHI) versus the EPA sliding scale is still an issue for the League of Cities and Towns.

*Comment - DOC and DNRC are proposing an updated water utility rate survey.*

General Variance Process Flow Chart - Mr. Mathieus reviewed the flow chart that was provided to the NWG email list with the rule package.

*Comment - It would be helpful if the steps in the chart were annotated with references to the appropriate sections of the rule or DEQ-12.*

Response - The flowchart posted on the NWG website already is annotated to show the linkages to DEQ-12, the rule package, and guidance documents.

Permit Process Examples - Mr. Mathieus asked for examples that DEQ could provide to facilitate understanding about how the permit and variance processes will work. The following three were suggested:

- A new discharger;
- Missoula; and
- A lagoon looking at ammonia treatment.

Doug Parker provided the following example for a new mining discharge permit:

- A receiving stream with a 14Q5 flow of 10 cubic feet per second (cfs).
- 100 gallons per minute (gpm) discharge with 30 parts per million nitrogen (pre-treatment).
- The non-degradation standard at 15% of the 0.3 milligrams per liter (mg/L) standard would be 0.045 mg/L. At 40% of the standard, the non-degradation requirement would be 0.12 mg/L.
- No treatment would result in a TN instream concentration of 0.84 mg/L due to dilution.
- Biological treatment would reduce the TN instream concentration to 0.37 mg/L.
- Limits of technology (reverse osmosis) would reduce the TN instream concentration to 0.23 mg/L.

Using this example, the new mining could not occur.

*Question - Could new mining occur with present nitrogen treatment technology?*

Answer by Doug Parker - I don't know.

*Question - We are presently under a narrative nutrient standard. How is non-degradation handled now?*

Answer - Under the current approach, non-degradation allows an increase of up to 40% of the harmful standard in 10% increments.



*Question by Dr. Mike Suplee - In the example, if the mine were to request an authorization to degrade and received it, and therefore could take water quality up to the 0.3 mg TN/L standard, about what concentration would the mine have to discharge end-of-pipe?*

Answer by Doug Parker - Around 7 mg TN/L.

Dr. Suplee reported on DEQ's recent evaluation of the Missoula waste water treatment plant's (WWTP's) treatment situation for nutrients. The 75<sup>th</sup> percentile of the upstream summertime TN and TP concentrations were used for mixing and are, respectively, 0.189 mg/L and 0.02 mg/L. The 14Q5 design flow of the Clark Fork River is 869 cfs. This would result, in a permit going forward, of a limit of 726 pounds per day (lb/day) TN and an average monthly limit for TN of 7.3 mg/L, and a TP load of 116 lb/day and an average monthly limit for TP of 1.16 mg/L. The current permit limit for Missoula for TN and TP (respectively, 10 mg/L and 1 mg/L) equate to currently-permitted loads of about 900 lb/day TN and 90 lb/day TP. Thus, going forward with the permitting process provided in DEQ-12, Missoula's permit would look largely the same as today (though somewhat more restrictive on TN and less restrictive on TP). Dr. Suplee also pointed out that Missoula has already been achieving an average monthly limit equal to or better than 7.3 mg TN/L about 25% of the time. DEQ is considering lowering the TP standards for the Clark Fork River below Missoula to 0.024 mg/L, which would change Missoula's requirement for TP to 41 lbs/day or an end-of-pipe concentration of 0.41 mg/L to be consistent with upper Clark Fork River requirements. The revision would not change TN requirements.

*Question - What are the algae concentrations below Missoula?*

Answer by Dr. Suplee - They have been averaging around 150 mg/L or less in recent years. They may be somewhat higher this year due to lower flows.

*Comments - DEQ must resolve the non-degradation issue before the numeric nutrient standards are adopted.*

Response - We may not resolve it before rule making is initiated, but we intend to do so before the six month rule making period is completed.

## **Public Comment**

There was no additional public comment

## **Meeting Schedules**

The next meeting of the NWG was scheduled for Wednesday, September 12, 2012 in the DEQ Director's Conference Room in the Metcalf Building in Helena.

**Appendix 1**  
**NWG Attendance List**  
**July 23, 2012**

**Members**

Chris Brick	Clark Fork Coalition
Michael Perrodin	BNSF Railway
John Wilson	City of Whitefish/Montana League of Cities and Towns (MLCT)
Jim Jensen	Montana Environmental Information Center
John Youngberg	Montana Farm Bureau Federation
Dave Galt	Montana Petroleum Association
Mark Lambert	Western Environmental Trade Association
Kate Miller	Montana Department of Commerce
Scott Murphy	Morrison-Maierle Inc. (via telephone)
Ryan Swinney	Bruce Swinney & Associates
Tom Hopgood	Montana Mining Association
Jeff Tiberi	Montana Association of Conservation Districts (via telephone)

**Alternate Members**

Craig Pozega	Great West Engineering (alternate for Dave Aune)
Doug Parker	Hydrometrics (alternate for Tom Hopgood)
Jay Bodner	Montana Stockgrowers Association (alternate for John Youngberg)
Bill Mercer	Holland & Hart (alternate for Dave Galt)

**Non-Voting Members**

Dr. Mike Suplee	DEQ, Water Quality Standards Section, Water Quality Specialist
George Mathieus	DEQ Planning, Prevention and Assistance Division Administrator
Dr. Jeff Bland	DEQ Economist

**Other Meeting Participants**

Alec Hansen	Montana League of Cities and Towns
Amanda McInnis	HDR
Mark Simonich	Helena Association of Realtors
David Dennis	DEQ Attorney
Rod M <sup>c</sup> Neil	DEQ Water Quality Standards
Mark Bostrom	DEQ Water Planning Bureau Chief
Eric Urban	DEQ Water Quality Standards
John North	DEQ Attorney
Jenny Chambers	DEQ Water Protection Bureau Chief
Jessie Luther	Browning, Kaleczyc, Berry & Hoven
Tina Laidlaw	EPA
Mike Jacobson	City of Great Falls
Judel Buls	AE2S, Inc.
	David MumfordCity of Billings (via telephone)
Richard Opper	DEQ Director

**NWG Facilitator**

Gerald Mueller	Consensus Associates
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