

DEQ Nutrient Work Group

January 24, 2017

1:00 pm- 4:00 pm

Room 111, Metcalf Building

1520 E. 6th Ave, Helena, MT

Preliminary Agenda Subject to Change

- 1. 1:00 Welcome and Introductions**
- 2. 1:15 Meeting Agenda**
 - a. The agenda will be reviewed**
- 3. 1:25 Timeline to June 2017 for Nutrient Standards Variance Revisions**
- 4. 1:45 EPA's requirements—as of 2015—for Water Quality Standards Variances (40 CFR 131.14)**
- 5. 2:15 Ten minute break (if wanted)**
- 6. 2:25 Determination of the Highest Attainable Condition (HAC)**
 - a. ≥1 MGD discharger group**
 - b. <1MGD discharger group**
 - c. Lagoons**
- 7. 3:25: Variance Duration Timeline (initial discussion; will continue next meeting)**
- 8. 3:45 Public Comment**
- 9. 3:55 Next Steps: set February Meeting Date, Adjourn**

DRAFT MEETING MINUTES
Nutrient Workgroup COMMITTEE
Tuesday, January 24th 2016
1:00pm to 4:00pm
Metcalf Building
1520 E. Sixth Ave, Helena, MT 59620

PRESENT

Committee Members Present:

Dave Aune
Chris Brick (phone)
Tim Burton
Dave Galt
Chad Jacobson (phone)
Shari Johnson
Tammy Johnson
Bill Mercer
Scott Murphy (phone)
Doug Parker (phone)
Alan Stine
Peggy Trenk
Susie Turner
Craig Woolard
Craig Workman (phone)

Non-Voting Members Present:

Tim Davis
Jeff Blend (phone)
Paul LaVigne
Mike Suplee
Todd Teegarden

Montana Department of Environmental Quality Staff Members Present:

Mike Abrahamson
Myla Kelly
John Kenning
Eric Urban

Others:

Ron Alles
Paul Montgomery
Randall Camp
Brad Koenig
Tina Laidlaw EPA
Coralynn Revis
Gary Russo EPA (phone)
Susie Turner
Paul Yakawich

Mr. Tim Davis called the meeting to order at 1:00 pm. The meeting commenced with introductions and clarifications:

- The nutrient variance is still in effect. These discussions have nothing to do with getting rid of the nutrient variance.
- After Montana's last adoption, the EPA adopted new variance rules into the CFR. Montana needs to comply with the federal regulations by July 1st, 2016.

Mr. Davis reviewed the meeting agenda:

- Timeline to June 2017 for Nutrient Standards Variance Revisions – it is actually July 1st, 2017
- EPA's requirements—as of 2015—for Water Quality Standards Variances (40 CFR 131.14) – Ms. Tina Laidlaw
- Determination of the Highest Attainable Condition (HAC) – Dr. Mike Suplee
 - ≥1 MGD discharger group
 - <1MGD discharger group
 - Lagoons
- Variance Duration Timeline, which Mr. Davis changed to HAC Timeline – Mr. Paul LaVigne
- Public Comment
- Next Steps and future meetings
- Adjourn

There were no questions or objections to the agenda.

Timeline to July 2017 for Nutrient Standards Variance Revisions (posted to website under *Ongoing Review and Update to Circular DEQ-12B: Nutrient*)

- Dr. Suplee clarified that changes are focused on DEQ-12B Department rules; DEQ-12A is not part of the discussion.
- Review of the potential timeline. **April 2017:** *Target* completion for Nutrient Work Group meetings, updates to Circular DEQ-12B, and Implementation Guidance; start 45 day public comment period, followed by public hearing. Technical materials available to public ≥ 30 days before hearing. Respond to comments, finalize rules, then Director's signature. Submit final rules to EPA for review.

Dr. Suplee asked for questions or comments. There were none.

Mr. Davis moved the meeting to the next agenda item.

EPA's requirements—as of 2015—for Water Quality Standards Variances (40 CFR 131.14) – Ms. Tina Laidlaw

- Ms. Laidlaw did not cover all of 40 CFR 131.14; only the pieces specific to Montana
- These final regulations were adopted in August of 2015. EPA completed approval of Montana's general variance in February of 2015.

Mr. Davis asked for comments or questions.

Question: *Explain the State's approach to justification.*

Answer: The State's economic justification assumed facilities would use reverse osmosis and would need to be 100% of the affluent stream. EPA is not looking to change the technology used for that

assessment, but will want a brief update to the analysis; this should include the status of communities current Median Household Incomes (MHI).

Question: If there is a new HAC that is affordable will the evaluation look at financial impact on communities that upgraded to the last HAC and now they have a 20-year debt. Before answering Mr. Rousseau made a correction to Laidlaw's last slide regarding underlying standard.

Answer: The debt would figure into the economic analysis and would likely mean the community couldn't afford the new HAC because of that debt.

Mr. Davis asked for other questions. There were none.

Mr. Davis moved the meeting to the next agenda item.

Determination of the Highest Attainable Condition (HAC) (posted to website under *Ongoing Review and Update to Circular DEQ-12B: Nutrient*) – Dr. Mike Suplee

Montana currently has 3 discharger groups.

- ≥ 1 MGD
- < 1 MGD
- Lagoons

Dr. Suplee identified the key areas of Montana's discussion with EPA

1. Identify the highest attainable condition (HAC) for the different discharger groups
2. Provide a justification for the timeframe to meet the HAC

Tetra Tech then estimated per-facility cost to upgrade to a range of treatment levels (in the Tetra Tech report posted on DEQ website) based on the assumptions in Tetra Tech's report.

- 7 mg TN/L, 0.5 mg TP/L
- 3 mg TN/L, 0.5 mg TP/L
- 7 mg TN/L, 0.1 mg TP/L
- 3 mg TN/L, 0.1 mg TP/L
- 7 mg TN/L, 0.05 mg TP/L
- 3 mg TN/L, 0.05 mg TP/L (Wastewater Limits of Technology)

Next, DEQ applied DEQ's public-sector affordability tests (from 2014 Guidance) to each community likely to need a variance in each group, which is almost 50% of all MPDES dischargers in the ≥ 1 MGD Group and just under 40% of all MPDES dischargers in the < 1 MGD Group. This determined how many can afford a treatment level and how many can't. Dr. Suplee walked the group through how this works, using this example for a community: (slide 8)

Estimated cost to upgrade to 7 mg TN/L, 0.1 mg TP/L: \$389,927.00

Upgrade cost, as % of MHI (including current sewer bill): 2.28% of the MHI

Community economic evaluation (i.e., secondary score): 2.6

Cost Cap (per graph, above), as MHI: 2.1%

Can treatment level be afforded? NO (2.28% > 2.1%).

This analysis was done for each community with these estimations for each treatment level (listed above) to determine who can affordably meet different wastewater treatment levels.

Q: *Is the cost an immediate capital cost or is it finance?*

Answer: It's finance; capital, operations and maintenance amortized over the lifespan of the project.

Dr. Suplee continued with his slideshow, showing the ≥ 1 MGD and the < 1 MGD groups that will likely need a variance. The graph also shows the percentage of who can afford the different treatment levels for both groups. (slide 9) The affordability declines in the < 1 MGD Group with the finer levels of treatment. Dr. Suplee thinks this is driven by the cost of phosphorous removal.

Dr. Suplee explained a limitation of this analysis, saying the graph is highly representative of the ≥ 1 MGD group because almost all members are publicly owned. DEQ does not have a good way to evaluate the private sector in the < 1 MGD group, where a substantial proportion are in the private sector, so those members have not been looked at with this process.

Dr. Suplee next explained how to use this data to identify potential group HACs. (slide 10)

- For the ≥ 1 MGD group, the HAC for the majority of members could be the wastewater limits of technology of 3.0 mg TN/L and 0.5 TP/L
- For the < 1 MGD group it could be between 3 and 7 mg TN/L and 0.5 mg TP/L

Dr. Suplee said it's not always necessary for a community to go to the HAC to achieve the nutrient standards. In some cases they can meet the numeric nutrient standards at a higher discharge concentration than having to go to HAC or the limits of technology. Dr. Suplee moved to slide 11 to show how the above numbers would affect each community in the ≥ 1 MGD group and how each case would vary. Dr. Suplee said most group members would meet the standard along the way and not have to meet the limits of technology.

Q: *For the city of Hamilton (for example) the numeric nutrient water quality standards can be met at 1.3 mg/L of total phosphorous in the discharge effluent. (Slide 11)*

Answer: Correct, the last column for both TN and TP considers how variable their affluent is right now, what is the dilution available in the stream, what is the 14Q5. DEQ basically mocked up a permit for each.

Q: *What happens when Hamilton is no longer at 34% of design flow? Does the 1.3 change?*

Answer: No. But if they went to 100% design flow, the 8.8 mg TN/L (to meet limits of technology, basically) would go down to 3 mg TN/L.

Comment: *This is a little misleading and presents a rosier picture. Bozeman is at 73% of design flow and our current median discharge concentration is now at 4.4 and it says we only have to go to 4.1. But really we have to go to 3 at 100% design flow, which is a lot harder.*

This comment brought Dr. Suplee to a spreadsheet to show the numbers discussed for Bozeman. He said because the variances are written only as loads, there are many situations where you do not have to treat to the 100% design flow number now, and perhaps for some time.

Comment: *I'm concerned about having my plant capacity scalped in the process. In Bozeman's case this takes a decade off of our plant capacity.*

Mr. Davis said DEQ is taking this into account and it's not expected to get to 3 mg TN/L at your next permit (in Bozeman's case), but it's setting up a duration of when you could plan for getting to HAC. He pointed out that the HAC is between current conditions and the numeric nutrient standard.

Comment: What we're doing is eating up our capacity. Then all we need to do is go back to the TMDL's and look at the water quality through the whole basin. We've invested millions, eliminated the capacity, and everything else, outside of the point source discharge, is still contributing higher. This is not the best use of limited public resources.

Mr. Davis pointed out that DEQ is looking at the general variances of the groups and if this doesn't work for a community the individual variance is still an option based on individual affordability. DEQ has to do rulemaking for the general variances and if a community can make it work they can use the general variance.

Dr. Suplee added that there are two different kinds of individual variances. One is for when the cost structure is different than the assumptions made for the general. The other evaluates whether or not the behavior of the receiving river system is different than most regional streams, and limitation can potentially be induced by one nutrient or another, but a lot of data is needed.

Question: In the current variance that was adopted there is a general variance that specifies numerical limits and the glide path. The numbers were quite a bit higher than 3 and .05, especially in the short term. Under the current variance program is the option to a permit limit set above water quality standards. Is this still an option? Or is this new number 3 and .05?

Answer: That is still an option. But it depends on how fast you get there.

Question: Will you explain how you dealt with the economics on a private sector?

Answer: There are two different economic justifications. One showed how much it would cost for everyone to go to reverse osmosis for both private and public, which justified the overall variance need. But there is no method to measure this for the <1MGD group to say how much is too expensive for the members of this group that aren't a POTW. The plus side to this is that their discharge numbers are good in water quality. In the ≥1MGD group almost all the members who need a variance are POTWs.

Question: You would only need a variance if you can't attain the HAC, correct?

Answer: No, you would need a variance if you can get to HAC and you need a variance if you can't get to the nutrient standard. If you're in an individual community, or for example, the Phillips 66 Refinery at Billings, they shouldn't need a variance because they're already meeting the nutrient water quality standards at the end of their mixing zone for phosphorous.

Question: I can get a variance if I can't meet the water quality standards, but can I get a variance that exceeds the HAC if I can afford the HAC?

Answer: This is what we're working through right now- how fast everyone needs to get there. DEQ is aware that people are in all different phases with their facilities.

Dr. Suplee moved to the HAC Duration or to get to the instream standards. Mr. Paul LaVigne walked people through this. (slide 13 of Dr. Suplee's slideshow.)

- First path to take: Investing in plant operators to bring the concentrations of phosphorus and nitrogen as low as possible without spending money. Approximate 2 year duration.
- For next step, ask operators. One option is implementing infrastructure improvements.
- During this time, hire an engineer to look for longer-term, bigger improvements while at the same time implement some of the lower cost items. This could potentially be a further glide path down.
- This is continual improvement, which EPA says is critical and the cost so far is minimal.

- Next decision: Design for full capacity all the way to HAC? Or aim for 75% of the way there?
 - 75% option, continuing to work on optimization. This brings you to another decision point if you have not reached HAC. Decide on next steps based on where you are at this point.

Mr. LaVigne stressed that wherever you are in the process, optimization is critical. DEQ has seen cases where they can get to very low numbers and a lot of plants aren't optimized to advanced operations. Mr. LaVigne knows there are other things important to the various communities and he is showing how to get to optimization cheaper by continual improvement over time.

Question: It's always facility planning where the devil is in the details. We need specific guidance from the Department what the duration might look like for a facility to get to HAC. The way I see it, I'm going to write a facility plan and come to you. Where are we getting specific guidance as to duration?

Answer: DEQ has struggled with this, but we recognize that affordability is critical and if it takes a couple of iterations to get there, DEQ supports that.

Comment: I see optimization as step 1 and seeing how well you can do and if you can get to HAC. This is obvious to me. And I am hearing that we would be able to buy some time to get to HAC by making a rational argument in a proposal as to how we're going to pursue optimization.

Answer: To clarify, DEQ is talking about the HAC variance timeframe, not the individual specifics. DEQ is lining out how long it would take the group, based on the slowest one in the group, between now and 2034. It gives facilities the opportunity to plan out in the timeframe. In February DEQ will have numbers on this for further discussion on where HAC lands.

Dr. Suplee distributed a handout which is a narrative version of what the steps might look like that Mr. LaVigne worked out. (Also posted on website under Possible Variance Timeframe – DRAFT)

Question: If in less than a few years that red line has changed, how can we possibly shoot for a moving HAC target? In Whitefish we have gone a long way down the road using DEQ-12B, and this comes up based on the Tetra Tech report. The study is based on a magnitude of assumptions and trumps everything the nutrient workgroup did up to this point. Am I mistaken?

Answer: No, but there is an assumption that was put in statute that DEQ review the variance every three years. Between when DEQ-12B was adopted last time and now, the CFR was adopted.

Response: The CFR was adopted in August of 2015 and I have a letter from the EPA date February 26th, 2015 that gives a glowing review and approval of the variance process and the nutrient standards.

Ms. Laidlaw explained that the numeric nutrient criteria were treated as a HAC in the referred letter. And EPA gave the expectation that in 2017 the limits set would reflect the HAC based on affordability. When EPA talks about the economic demonstration, this is when dischargers can't afford to achieve the underlying numeric nutrient criteria. This is the only affordability analysis done for the 2014 submission. Dr. Suplee added that the glide path that DEQ has in guidance was put together from best estimates as how it might look going forward.

Question: Is the 3 and .05 HAC in the federal register or is it Tetra Tech's assessment?

Answer: It's Tetra Tech's assessment of wastewater limits of technology.

Mr. Tim Davis said the Tetra Tech report will be open for further discussion in future meetings once everyone in the workgroup gets a chance to read it. (Posted to the website.)

Comment: *The document has tremendous impact on communities in Montana.*

Response: The report is a starting point, recognizing that feedback is needed from DEQ and the workgroup.

Comment: *But it's setting the HAC limits that are based on an economic analysis that is full of holes. It's setting these numbers that we're looking at in this presentation and I don't see where they have any more merit than the variance numbers that are in DEQ-12B.*

Dr. Suplee didn't agree, saying the numbers in guidance were best professional judgement. They were discussed the least and brought in at the end of the process, which is why they're in guidance, not rule.

Question: *Are they not based on the economic analysis?*

Answer: No, the economic analysis was based on answering "does the State need a variance at all?" and the cost of meeting the underlying nutrient standards. Another part (the numbers in guidance) showed how to move as close as possible to the nutrient standards over time, in incremental steps.

Question: *Would it have been appropriate to give Tetra Tech those numbers to base their report on?*

Answer: We could. Some of them overlap with what Tetra Tech looked at.

Ms. Laidlaw encourage the site specific data be given to DEQ. Many of the ≥ 1 MGD facilities are already below 1 and 10 and warrants revisiting to determine what makes sense for an HAC for 2017.

Mr. Davis added that DEQ has laid this out as potential HAC's and that the federal CFR made clear that they have to identify, as part of the variance, an HAC.

Question: *So this might be subject to adjustment?*

Answer: Yes- DEQ is laying this out as soon as they can because they have to adopt new rules by July 1st. But these draft HAC values are not written in stone. Dr. Suplee added that the Department emphasized to EPA that at this juncture they'd like to see the discharger groups (≥ 1 MGD, < 1 MGD, lagoons) remain intact because this approach has solved many problems of instituting this process. He said if DEQ has to go to individual variances for every community there will be an incredible amount of rulemaking.

Question: *Can you describe how the Tetra Tech report will be vetted and potentially changed or verified?*

Answer: Not sure, but engineers can run the numbers for their own facilities and find if they're comparatively accurate and give DEQ feedback. DEQ will have to decide on the viability of the report which will have a bearing on the next step to define the HAC.

Question: *When we go to the next level, it's a big significant jump. It's also incremental in nature so we don't have nice, smooth glide paths. It's going to push more money toward a treatment plant. We have collection systems that are worth 2/3 of the value of the treatment plant and they're 50 to 100 years old. How does that get integrated into the decision making process? When you jump up to 2.8% of MHI and consume all the community resources, it makes it impossible to manage any other infrastructure.*

Answer: At this stage it hasn't been given consideration and it varies by waterbody system in terms of the effect. When you have a large facility on a small stream getting to those lower numbers will have a big effect. Some places will get to the standards because the river's in pretty good shape already and they have dilution potential. This is looked at with each permit; can they meet the standards and do they need a variance.

Question: *The nutrient workgroup defined limits of technology in DEQ-12B and those numbers have an enormous impact. What's the process for resolving this discrepancy, how is the decision made, and who makes it?*

Answer: Those numbers are actually in guidance. But there are methods by which things are permitted and we might be able to leverage that approach while looking at the numbers to decide which LOT numbers are liked better. The numbers for the limits of technology are not necessarily what a permit should be.

Dr. Suplee encouraged the workgroup to email any ideas on this topic to him so they can be discussed in the next meeting.

Question: *The numerical numbers associated with the HAC set the design standard for treatment plants in Montana for the next 20 years. I need to understand the process for defining these numbers. The numbers for Bozeman are hundreds of thousands if not millions of dollars.*

Answer: DEQ will work to pin that number down.

Question: *Do we have a process for that and who makes the ultimate decision? There is a fairly substantial discrepancy between DEQ-12B and the Tetra Tech report. Is the decision made from this group?*

Answer: This is part of the reason that the limits of technology weren't put into rule. It was a hard number to pin down. It is probably the Department's final decision.

Question: *Does the revision of the variance process define a numerical standard for an HAC?*

Answer: Correct.

Ms. Laidlaw added what she is interpreting from the discussion is that there are other thresholds requiring different technologies and different costs from the numbers Tetra Tech used. This information and how you can use it to attain the HAC is what is needed. Dr. Suplee thought a subcommittee will be needed to work on this and bring the consensus back to the main group.

Comment: *We have all been off on our engineer estimates from time to time. These important costs drive what's affordable for a community, which varies by a sliding scale. From a small community perspective, what you're asking us to do is max out to our affordability. It's the only predictable path I'm seeing. Maybe it would be productive for this discussion to be about what's affordable. It seems that every 3 to 5 years the numbers will change again.*

Comment: *There is a lot of activity in every basin where we're required to comply with regulations that have to expand over time. We go to the maximum cost to be within compliance with regulations, but what does that do to the waterbody in terms of cleaning up the water? There are a lot of contributors to the waterbody that are unregulated. So we feel comfortable investing hundreds of millions of dollars because we can measure that to comply with this part of the law, and yet we have this whole waterbody out there. I'm suggesting that's not the best way to spend limited public resources if the end game is cleaning up the waterbody. We are talking about such significant investments now that to continually put that off into the future as a pilot or an approach that can more cost effectively clean the water makes us go to the highest expense to go through the model with, invest, and then we move on to the next iteration. At some point we have to step into this discussion because there are other ways to change human behavior that cleans the water more cost effectively than these huge investments.*

Mr. LaVigne pointed out that there are secondary treatment plants that are producing <3 mg/L and they've spent hardly any money and we have them putting out < 1 mg/L total phosphorous. DEQ is investing in this approach and understands the question of why the community should spend all the money and no one else. This is a way to get significant reductions and achieving these goals without spending any money. Ten years ago we brought in experts to train engineers but it didn't do anything to the cost. So we started this approach, but no one's taken it seriously.

Mr. Davis added we're talking about getting to the level of your affordability. And when we lay this out, what are the other tools? These may be lower cost options to get you that last level. In some communities it's just not going to help while in others it may help significantly and may be a lower cost option of getting where you need to instead of always relying upon building to the limits of technology or to the limits of affordability.

Comment: I appreciate this but we need to do a pilot and look at the basin. Not only the point source discharge and how we can spend a lot of money to reduce the contributions, but all the other factors that go into that water. I want this on the record because it's critically important to the long term goal.

Answer: This is tricky because it's variable from case to case. The Helena valley's case is one of the worst scenarios. There is so much nonpoint and so many septs. But if you look at the Yellowstone River below Billings, the single largest switch point in terms of water quality is all below the waste water plant and their affect can be seen all the way to the Big Horn River. It's hard to pick a pilot because there is no typical scenario.

Response: That's my point, each basin is different and what we're doing is broad brushing it because variables exist.

Question: Ms. Laidlaw mentioned the Pollution Minimization Program (PMP) as needing to be part of this process. Could Mr. LaVigne's optimization be considered part of the PMP and enforced at the State level?

Response: The studies are already required for DEQ 12-B and EPA sees it as a valuable first step in terms of the duration piece. Even if you have a numerical HAC value, optimization makes sense as part of the overall time it takes to achieve the final HAC.

Question: Can we use the non-point source component to wrap into that as well?

Answer: You can look at alternatives, and Montana's rules require looking at optimization, training, and alternatives to discharge. Ms. Laidlaw stated what the State of Wisconsin does for this and told the work group to send her an email if they want more details on it.

Mr. Davis again emphasized the option of setting up a technical committee to discuss limits of technology and the Tetra Tech report before the next work group meeting. These would be weekly or bi-weekly meetings.

Question: That will address the agency and what the number should be in regards to cost, but the affordability side still would not be addressed. Is there a place to reassess affordability in relation to other costs and expenses communities have? A lot of money has to be reserved for collection systems.

Answer: Agreed, the reserving for non-treatment or future collection systems isn't in there.

Mr. Davis would first like to dive into the limits of technology and the Tetra Tech discussion. DEQ will discuss this question about other expenses internally and with EPA and how to take this into account. Dr. Suplee and Mr. LaVigne will lead the subcommittee. An email will be sent out to see who is interested and they will meet at least every other week between now and the next nutrient work group meeting.

Question: A lot of this discussion centered around the ≥ 1 MGD and < 1 MGD groups. How many of our permits don't fit that category?

Answer: 56, a big group.

Response: *It's a big group compared to what we usually talk about. They haven't been included in this discussion.*

Answer: We intend to talk about them in the next meeting.

Mr. Davis asked for other questions.

Question: *In the narrative of optimization and planning your phases, how does that fit into where your permit would land over those 15 or 17 years as what would be required?*

Answer: Assuming what this group will submit as their HAC will be your end goal. However long before you need to get there will be the term of that variance. Depending on what you need to do, it could fit in at different phases towards achieving that final HAC. The HAC would be the numbers in your permit and then you have a compliance schedule with the narrative, with no backsliding.

Comment: *There are no numerical linked criteria in the national register.*

Answer: That's where the State law and Federal law differ. Our State law was based on the idea of seeing what could get done in 20 years. The Federal law has no limits on how long a variance can exist as long as there is a justification for keeping it going. When we get closer to 20 years, decisions will have to be made about where we are and what will we do. If it has to be changed it will go back to the legislature to get the law changed.

Dr. Suplee added that the State law says if something were to come along that's affordable, it has to be taken into consideration.

Dr. Suplee stated that the Tetra Tech report and the presentation will be posted on the website. The presentation from the last meeting is embedded in the minutes. The timeline and deliverables will be revisited after this meeting.

Mr. Davis confirmed that the February meeting will be set up after this meeting and an email will be sent about the subcommittee meetings. A Doodle Poll will be sent regarding February meeting dates.

Mr. Davis acknowledged the question of what happens if the date passes and we haven't adopted a new variance. Ms. Laidlaw said the variance expires. Dr. Suplee responded if the variance expires, the nutrient standards go away and the work group is left with the narrative standard. Permitting then has to figure out how to go forward.

Mr. Davis asked for any final comments. There were none. The meeting concluded at 3:00 pm.