Minnesota 3M PFC Settlement

Agenda for Drinking Water Supply Technical Subgroup 1 Meeting

Wednesday, February 19, 2020
1:00 p.m.-4:00 p.m.
Cottage Grove City Hall — Training Room
12800 Ravine Parkway South, Cottage Grove

Meeting Purpose:

- Discuss the details of model inputs, scenario results, and cost information.

1. Welcome	Steve Colvin – DNR Gary Krueger – MPCA Milt Thomas – MPCA	1:00 pm
2. Updates a. Work group meeting b. Others?	Steve Colvin – DNR Gary Krueger – MPCA	1:10 pm
3. Conceptual Drinking Water Supply Plan: Drinking water modeling discussion	Brian Hamrick – Wood	1:20 pm
4. Public comments and questions	Milt Thomas – MPCA	2:20 pm
5. Break		2:30 pm
6. Conceptual Drinking Water Supply Plan: Groundwater modeling discussion	Jim Feild – Wood	2:40 pm
7. Next steps: Upcoming activities and tasks, future meetings, and agenda items to request	Mark Lorie – Abt Associates Steve Colvin – DNR Gary Krueger – MPCA	3:40 pm
8. Public comments and questions	Milt Thomas – MPCA	3:50 pm

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Notes for Drinking Water Supply Technical Subgroup 1 Meeting

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1:00 p.m.-4:00 p.m.
Cottage Grove City Hall — Training Room
12800 Ravine Parkway South, Cottage Grove

Group members in attendance:

Richard Adams	Stu Grubb
Marian Appelt	Kurt Haakinson
Brian Bachmeier	Jon Herdegen
Chris Bryan	Greg Johnson
Ryan Burfeind	Gary Krueger
Steve Colvin	Lucas Martin
Brian Davis	Matt Moore
Dan DeRudder	Tony Runkel
Ali Elhassan	Ryan Stempski
Jack Griffin	Jim Westerman

Presenters:

- Gary Krueger, Minnesota Pollution Control Agency (MPCA)
- Steve Colvin, Minnesota Department of Natural Resources (DNR)
- Shalene Thomas, Wood
- Hannah Albertus-Benham, Wood
- Brian Hamrick, Wood
- Erin Daugherty, Wood
- Jim Feild, Wood
- Mark Lorie, Abt Associates (Abt)
- Milt Thomas, facilitator, MPCA

Welcome

Gary Krueger (MPCA) welcomed Subgroup 1, and Steve Colvin (DNR) introduced himself. Milt Thomas (MPCA) began by introducing the goals of the meeting: to discuss the details of model inputs, scenario results, and cost information. Andri Dahlmeier was introduced as the new coordinator at MPCA.

Updates

Steve Colvin (DNR) provided a brief legislative update on a bill introduced that, if passed, would make PFAS a hazardous substance and a hearing on a bill that would create a PFAS task force.

Conceptual Drinking Water Supply Plan: Drinking water modeling discussion

Brian Hamrick (Wood) started by providing an overview of the hydraulic models used to develop the different scenarios. He reviewed existing models and spatial data received, including those in WaterCAD, GIS, and InfoWater. For communities without any hydraulic models, Wood developed models. Brian described data gaps, including:

- Well and booster pump curves
- Real-time data

- Well interference in the Tamarack Well Field
- Viability of existing interconnects.

He also talked about the limitations of the model, including:

- Steady-state model
- Seasonal fluctuations not accounted for
- Model simulations under summer operating conditions, which are worst case in terms of consumption.

Brian then provided a review of the cost development. Lastly, Erin presented the results for the scenarios.

A subgroup member pointed out that this analysis assumes that all operations and maintenance (O&M) costs are covered by the settlement.

Conceptual Drinking Water Supply Plan: Groundwater modeling discussion

Jim Feild (Wood) provided an overview of the groundwater model. The groundwater model relied on existing data and assumptions from partners including the Minnesota Geological Survey (MGS), the Minnesota Department of Health (MDH), MPCA, DNR, and the Metropolitan Council. The model was calibrated to average groundwater elevations over a three year time period (2016-2018) and the scenarios were simulated under static, constant (steady-state) conditions. Jim also described the different layers included in the model and its use of unstructured grids (rather than a finite difference grid), which allows the model to look at the off-set of beds from faults and layers that pinch in and out. The observation points were those measured on a frequent enough basis so that they could be used to create a synopsis on how the groundwater was behaving. The objectives of the modeling were to determine if there is enough water to support the anticipated pumping in each scenario and if that water would require treatment.

Subgroup members asked for more details regarding the pumping conditions. Wood used average daily demand, which spreads out the peaks and lows. This doesn't provide analysis of the peak pumping demand days but this was the simulation for the entire time frame between now and 2040. If a steady-state model was no longer used, then maximum daily demand could be included in the analysis, but it would have to be for a short period of analysis because of the amount of data needed.

In response to a question about particle tracking, Jim explained that the model relies on conservative assumptions, i.e. anything along the flow paths gets treatment even though there are already containment wells in place. For some of the community-specific scenarios, Wood put in reverse particle tracks, in addition to the forward particle tracking that they generally relied on.

Wood did not examine groundwater availability beyond 2040, which was something a member of the Subgroup expressed interest in seeing. Wood also did not evaluate the impact of wells on surface water although they are starting to take a preliminary look at that interaction. The high seasonal variability in water use coupled with the steady-state nature of this model makes it difficult to get good predictions of groundwater-surface water interactions.

The Subgroup was also concerned with the timeline for feedback from communities, and interested in hearing more about the cost and feasibility of ion exchange (IX) and granular activated carbon (GAC).

Next steps

Shalene Thomas (Wood) presented on Wood's next steps:

- Refinement of the models (calibrate flow path timestamps, address buried bedrock valley, additional future demands)
- One-on-one meetings with the local government units (LGUs)
- Potentially model new scenarios
- Continued discussion of water demand numbers, any potential updates from communities, and how to incorporate those while maintaining an "apples-to-apples" analysis.

Mark Lorie (Abt) presented upcoming steps and deadlines, including:

- Subgroup members were asked to provide feedback on Chapter 7 and Appendix E, as well as provide input on the Priority 1 Criteria that focus on regional planning, local planning, and public acceptance (input can be provided via a spreadsheet shared with the work group).
- Co-Trustees will hold the informational and listening sessions on Wednesday, February 26th (Lake Elmo), Thursday, February 27th (Cottage Grove), and Wednesday, March 4th (Woodbury)

Subgroup 1 members were asked to reflect on what they would like to focus on for the March meeting.

Public comments and questions

Members of the public were given the opportunity to ask questions. Concerns were expressed regarding the basis for the GAC costs and how that influences the IX costs. Another member of the public asked how personnel figured into O&M costs, specifically for the regional scenarios. While the regional scenarios include costs for 5 or 6 operators for the water treatment plants, they do not include additional administrative costs because of uncertainty around where a regional authority would be housed.

Another member of the public noted that O&M costs seem high compared to capital costs. Wood stated that O&M costs also include recapitalization costs and they do not make any assumptions about what entity is paying for the O&M.