

## Minnesota 3M PFC Settlement

### Agenda for Government and 3M Working Group Meeting

Wednesday, December 16, 2020

9:00 AM-12:00 PM

**Webex link:** [Join the Meeting](#)

*(If using Webex, we request that you connect to the audio using your phone rather than the computer, and use the “Call me” option. Please refer to the Webex instructions for more information.)*

Conference line (if not using the Webex “Call me” option): 1-415-655-0002; Access code: 178 314 7080#

#### Meeting Purpose:

- Update on Project 1007 and implications for the Conceptual Plan
- Open discussion on the Draft Conceptual Plan and recommended options
- Clearly identify a path forward to finalize the Conceptual Plan

1. Welcome a. Webex instructions b. Roll call c. Agenda d. Updates and email follow-up e. Liaison report(s)	Kirk Koudelka – MPCA Jess Richards – DNR Emma Glidden Lyon – Abt Associates Mark Lorie – Abt Associates	9:00 AM
2. Update on Project 1007	Kirk Koudelka – MPCA Jess Richards – DNR Rebecca Higgins – MPCA	
3. Discussion of topics selected by the Work Group	Kirk Koudelka – MPCA Jess Richards – DNR Mark Lorie – Abt Associates	
4. Public comments and questions	Mark Lorie – Abt Associates	10:20 AM
BREAK	N/A	10:30 AM
5. Discussion of topics selected by the Work Group (cont.)	Kirk Koudelka – MPCA Jess Richards – DNR Mark Lorie – Abt Associates	10:40 AM
6. Path forward and next steps	Kirk Koudelka – MPCA Jess Richards – DNR Mark Lorie – Abt Associates	
7. Public comments and questions	Mark Lorie – Abt Associates	11:50 AM
ADJOURN		12:00 Noon

**Minnesota 3M PFC Settlement**  
Notes for Government and 3M Working Group Meeting

Wednesday, December 16, 2020  
9:00 a.m. - 12:00 p.m.  
Virtual Webex Meeting

Group members in attendance:

Chris Hartzell	Christina Volkers
Daniel Kylo	Jeff Dionisopoulos
Jennifer Levitt	Jess Richards
Jessica Stolle	Kathryn Sather
Kevin Chapdelaine	Kirk Koudelka
Kristina Handt	Lowell Johnson
Mary Hurliman	Monica Stiglich
Ron Moorse	Steve Colvin

Presenters:

- Rebecca Higgins, Minnesota Pollution Control Board (MPCA)
- Kirk Koudelka (MPCA)
- Jess Richards, Minnesota Department of Natural Resources (DNR)
- Emma Glidden-Lyon, Abt Associates
- Mark Lorie, Abt Associates

**Welcome**

Emma Glidden-Lyon (Abt Associates) and Mark Lorie (Abt Associates) welcomed the work group to the meeting. Mark reviewed the agenda. The purpose of the meeting was to hear an update on Project 1007 and receive feedback from the work group members on topics that they suggested to the Co-Trustees. Kirk Koudelka (MPCA) provided updates to the work group. He reiterated that the goal of the meeting was to listen to work group feedback.

Monica Stiglich and Kevin Chapdelaine provided an overview of the previous day's Citizen-Business Group meeting, including:

- Minnesota Department of Health (MDH) gave a presentation on the health impacts of PFAS ahead of the meeting. This had been a request of the Citizen-Business Group.
- The Project 1007 presentation led to a lot of discussion including some concerns about multi-benefits wells and their impact on water availability, especially in Woodbury.
- Both the PFAS presentation and Project 1007 presentations highlighted the need for the work groups to stay flexible in decision-making as there are many unknowns associated with health standards and contaminant movement.
- There was also a lot of discussion on the acceptability of the three options. Many Citizen-Business work group members liked Option 2 because it treated to the lowest health index (0.3)

of the options. Some work group members still expressed a desire to treat all wells and there was discussion about clarifying what “all wells” really means.

- Some work group members were still concerned about the large amount of money for sustainability and conservation. Others felt that the Project 1007 presentation highlighted why those funds were so important to preventing the need for treatment in the future.
- There was also discussion about community liability in disposing of media from carbon treatment systems. There is still discussion needed on liability and chain of custody.

### Update on Project 1007

Rebecca Higgins (MPCA) and Gary Krueger (MPCA) provided an update on Project 1007. The goal of this effort is to understand the complex picture of sources, pathways, and risks in the area, and to better understand how PFAS contaminants have moved throughout the region, in part aided by a flood mitigation system installed by the Valley Branch Watershed District in the 1980's. Project 1007 is covered under Priority 1 of the Settlement, which directs MPCA to conduct a source assessment and feasibility study. According to the Agreement with 3M, any mitigation measures identified in the study will likely be funded by Settlement dollars. The Project 1007 PFAS investigation effort has been collecting samples along the Project 1007 corridor as part of a source assessment analysis and to gather information to build a detailed conceptual site model. Key findings include:

- The Project 1007 system is extremely complex with a high level of interconnection between hydrologic regimes of surface water and groundwater across the entire region. The State is working on a combined drinking and surface water model that will analyze the flow of PFAS contamination in more detail over time. The model will combine above- and below-ground geologic features to provide insights into how PFAS could impact the area's aquifers.
- The 3M Oakdale Disposal Site and Washington County Landfill are primary sources of PFAS into the system. There is a gradation of PFAS impacts present throughout the entire Project 1007 corridor that exceed site-specific water quality criteria for PFOS. These water quality criteria are new as of October of 2020 and were developed in-part for this specific area. The site-specific water quality criteria are values protective of fish habitat, ultimately aimed at human protection for fish consumption. This criteria includes a value for fish tissue and for surface water that supports meeting the fish tissue value. Concentrations in sediment and surface water are highest immediately downgradient of the Oakdale Disposal Site. There are also a number of sediment sinks where PFAS has settled and become secondary sources, partly due to hydrologic properties of the water bodies and the organic nature of the quiet portions of the system. An example of a sediment sink is the wetland area immediately downgradient of the Oakdale Disposal Site. Rain storms or other natural events may cause more PFAS to be released from the sediment sink locations, and are referred to as PFAS “pulses”. These pulses are most evident in the system after the Project 1007/Raleigh Creek confluence at Tablyn Park after precipitation events.
- Most of the PFAS mixture is made up of PFOS in samples collected to-date in the surface water, sediment and animal tissues. A varied blend of the PFAS signature is present in the groundwater near the disposal sites with PFOA and PFBA making up a greater portion of the total PFAS near the Washington County Landfill as opposed to PFOS dominating the signature from the Oakdale Disposal Site, with some precursor PFAS compounds (including FOSAs, FASEs, and FASAAs).
- PFAS foam can be generated from physical agitation from precipitation, wind, or high turbulence areas, and are found in a variety of forms on surface water bodies: actively

accumulating, organic/particulate rich, frozen, deflated, or not-accumulating/small clusters of foam. Residents are encouraged to stay away from foam if they see it and wash their hands immediately after coming into contact. High concentrations of foam do not necessarily correlate with the highest PFAS concentrations in the water in which foam is found. Significantly high concentrations of foam were found in Raleigh Creek and at the outlet of Horseshoe Lake.

Rebecca then discussed the merits of using multi-benefit wells as a way to address long-term regional groundwater impacts. Multi-benefit wells could possibly serve long-term municipal drinking water demands while controlling large, regional groundwater plumes. These would be extraction wells in the bedrock to capture and treat PFAS-contaminated water. The combined extraction rate of the multi-benefit wells would represent 67% of 2040 total regional average daily demand. A key component of multi-benefit wells is managed aquifer recharge through direct injection of the excess treated groundwater. This practice is less common in Minnesota but is common in many other places in the country and across the globe. Long-term remedial actions will be dependent on PFAS presence, concentrations and behaviors, PFAS plume geometry and movement, fate and transport, and PFAS risks and remedies.

Rebecca also discussed interim corrective actions which involve surface water cleanup options. The State expects to consider targeted sediment cleanup assessment in 2021. The interim surface water clean-up option under evaluation is a two-step process involving first, surface activated foam fractionation that aerates contaminated water, forcing PFAS to form foam which is removed and hyper-concentrated. The treated water can be returned to the source. The first tests of the foam fractionation have shown a 79-85% removal of total PFAS, with up to 99% removal of PFOA/PFOS. The second step in the process uses electrochemical oxidation to transform, oxidize and mineralize the hyper-concentrated small volume PFAS liquid, thereby decoupling the carbon-fluorine bonds. Hyper-concentrated PFAS liquid from the Oakey Air Force Base treatment system in Australia is being tested at the AECOM laboratory in Austin, Texas to evaluate the second step in this process. That PFAS liquid is similar in PFAS composition to the Project 1007 surface water.

Rebecca then discussed the Project 1007 next steps. Source assessment work will be ongoing for the next 1-2 years. Modeling and interim corrective actions will take place over the next 1-3 years. The feasibility study will begin in 1-1.5 years and this will address the long-term, regional cleanup options. Cleanup itself will take years to decades.

*Feedback:*

One work group member asked for clarity on how multi-benefit wells are different from 3M's requirement to pump and treat contaminants out of the Woodbury Landfill. Gary explained that Project 1007 was part of a larger effort that addresses regional concerns. It is 3M's responsibility to clean up at the disposal sites causing contamination, but the cleanup and investigation of the surrounding area is covered under Settlement funds. This work group member was frustrated that 3M was not responsible for contamination outside of the disposal sites. They felt 3M was not meeting their clean-up commitments. Gary explained that the 2007 Consent Order required 3M to install and enhance groundwater control at the disposal sites. They added additional control wells to control groundwater and surface area releases from the site. Monitoring and sampling has shown that there are PFAS

releases still coming from those sites and the State has asked 3M to do additional work to stop releases, especially at the Oakdale Disposal Site. The State expects additional action from 3M to control the surface water migration of PFAS from the Oakdale Disposal Site. Remediation actions along the Project 1007 corridor come out of the Settlement funds. Kirk reminded the work group that the Settlement money is not just for a drinking water plan; it is a natural resources damages settlement. Therefore, it encompasses more than just treatment at the tap. It is important to consider regional groundwater and surface water impacts that may reduce the need for treatment in the future.

The same work group member stated that they wished this information had been available before the comment period ended. The Co-Trustees assured them that they would still be considering comments that come in from the work group members over the next few months. Kirk also explained that the State did not want to put the Conceptual Plan on hold in order to conduct the full Project 1007 investigation and feasibility study. Instead, these efforts are happening in parallel.

Other work group members had questions on the multi-benefit wells. One asked if the water would be treated to drinking water standards before being reinjected into the system. Gary explained that the State still needs to do further analysis to see if the multi-benefit wells are a viable option. Rebecca added that more foundational tools, like the combined groundwater-surface water model, were still needed for further analysis.

Other work group members thought the concept of multi-benefit wells had a lot of potential. However, they were also concerned about funding prioritizations. They felt that project cost estimates in Woodbury were too low and encouraged the State to provide adequate funding for drinking water capital costs before things like multi-benefit wells are funded. They also asked if there was data and cost estimates to support a \$60 million set aside for sustainability and conservation. Kirk explained that they do not have an exact dollar amount at this time but they would have a more refined estimate as more information was gathered. Others felt sustainability and conservation were priorities because they impact groundwater quantity and quality.

### **Discussion of topics selected by the Work Group**

The work group members decided which topics to discuss during the meeting.

### **Public comments and questions**

There were no questions or comments from the public at this time.

### **Discussion of topics selected by the Work Group**

#### *Acceptability of options*

The work group members first discussed the acceptability of Options 1, 2, and 3 as laid out in the draft Conceptual Plan. The results of the discussion are below:

- Most work group members expressed support for Option 2 because it protects to the lowest HI threshold (0.3). Some work group members selected Option 2, but really supported the option to treat all wells to the lowest HI possible. One work group member said they would rather treat to the lowest possible level, even though it would mean fewer years of O&M. Other work group

members said that a long O&M period was very important to them, especially for private well owners.

- Many work group members said that their city councils and local government leadership still needed to pass resolutions stating their preferred option. Some communities will not do this until they have some of their questions answered about the cost estimates. Woodbury requested an additional one-on-one meeting to discuss these concerns.
- One community supported Option 1 from a technical perspective, but their community leadership still had to officially make a decision.

One work group member was happy to hear the city council and community leadership would be weighted by the Co-Trustees. They felt that community members who commented on the Plan may not be as informed as a city council. Kirk explained that they would look at all of the comments received and find common themes.

### *Funding priorities*

The work group also discussed funding priorities. Key points of discussion are below:

- Some work group members indicated that capital costs to build drinking water infrastructure should be the highest priority. They suggested that sustainability and conservation are important, but should only be funded after drinking water infrastructure has been funded. Many communities are already funding sustainability and conservation activities.
- Another work group member suggested that Option 2 should not have reduced O&M years compared to the other options. They felt that funds from other categories should be reallocated to cover as many years of O&M as Option 1. The work group member also felt that public and private wells should have the same number of years of O&M in order to be an equitable solution. Kirk explained that they planned a longer O&M period for private wells since owners would have to pay more per year than those on a municipal systems (about \$1000 for POETS O&M compared to an average increase in annual water bill of \$75). There was some discussion about whether equity meant providing the same service to everyone or having everyone pay the same price for water. The work group member stated that there would always be some inequity for private well owners that do a lot of irrigation.
- There was also some discussion about the future relationship between the State and private property owners regarding treatment systems (e.g., removal, installation, etc.). Kirk explained that cost estimates were made using recent State costs for POETS that have been installed. The Co-Trustees understand that private well owners may want to work with a local unit of government but realize that not all communities have the funds to manage private well treatment on their own.

### *Cost issues*

The work group asked if there would be any assurance from the State, such as some kind of contractual agreement that capital projects in the Plan would be carried out. Kirk said they have not made a final decision yet and are waiting to consider all of the comments that came in. There was still concern about cost with one work group member pointing out that projects of this size rarely stay on budget.

### *Centralized water softening*

The group discussed centralized water softening, which may be an option for treatment systems that require pre-treatment. Centralized water softening could reduce water use and represent savings to homeowners that would not need to buy water softeners anymore. Centralized treatment would soften water at the source instead of having in-house softeners, which leads to an increase of chloride concentration in the water. Treatment can be done more effectively to scale at a municipal level. Work group members generally supported ongoing conversations on this topic. One work group member said they should make a decision soon since it could affect infrastructure construction. A representative from MDH explained there could be health impacts of municipal water softening. MDH is working on a white paper on this topic now.

### **Next steps**

Mark discussed next steps for the work group. The public comment period ended on December 10<sup>th</sup> and the State and consultants are working through the feedback now to find common themes. They are also reviewing work group comments. There will be no work group meetings in January. The February meetings, and possibly the March meetings, will focus on a summary of the feedback received and options for updating and finalizing the Conceptual Plan. In March, the Co-Trustees plan to have another round of one-on-one meetings to discuss updates to the options. The final decision is slated for April and information will be disseminated to the public through work group members, work group meetings, and public meetings.

### **Public comments and questions**

There were no questions or comments from the public at this time.