**Regional Report Q & A**

**AWOP National Meeting**

**July 19 – 21, 2021**

**Region 4 Reports:**

1. **Rick question to Eric (North Carolina) – How have the systems responded to your training?**

* We continue to have discussions with one system (Lexington). Timing was good for train­ing because they have a new staff person willing to learn new approaches.

1. **Rick question to Eric (North Carolina) – How did you decide on which studies to start with?**

* With Lexington they were experiencing DBP issues, so the hold study was useful, and it was an easy study to implement. The hydrant sampler is a great tool for collecting representative samples, and the data can be used to develop a water quality map.

1. **Question from Val to Lindsey (South Carolina) – How many surface water treatment plants in South Carolina are participating in the program?**

* South Carolina has about 60 surface water plants that are aware of the AWOP goals and par­ticipate in the program. We encourage states to optimize their current infrastructure before building new facilities.

1. **Janine question for Erich (Tennessee) – For your training on the storage tank spreadsheet, how was it conducted and were CEUs provided?**

* Training was conducted virtually with invited operators, and CEUs were provided to participants.

1. **Rick question to Jackie (Kentucky) – Wow, what a DBP performance improvement graph! What do you do with those systems that have not improved?**

* Jackie responded that they are now focusing on targeted technical assistance (one-on-one). Many of these systems are consecutives. They are also looking at representative sampling to make sure their sample sites are good. They think that there are still some areas to focus on. They will include optimization focus in enforcement plans to get them implemented.

**Region 3 Reports:**

1. **(*chat)* Johnny Mendez (Alaska) question to states – How have states incorporated AWOP concepts in the sanitary survey process?**

* Mike Bolf (Alaska) offered to send their sanitary survey checklist to those that share their email. Johnny.mendez@alaska.gov
* Dixon Tucker indicated that Virginia visits each plant annually. Their survey includes a summary of system status with respect to the optimization goals for the past two years and what the system might need to improve on (i.e., reasons they weren’t meeting the goals). They also encourage plants to do Special Studies.
* Mandy Smith said that Connecticut trained their staff to observe filter backwashes during the survey and to look at SCADA data trends for filter turbidity and ask questions about tur­bidity data capping, bed expansion, filter-to-waste options, etc. They also now review MORs, which had been previously handled by a different unit, in an effort to bring it all together and educate during surveys. This is important face time with the PWS.

1. **Larry – I am impressed with the progress that Michigan has made in the past few years. I know one of the things new states struggle with is getting water systems interested to join AWOP. What are some of your insights on getting participation from your plants?**

* Mike: I don’t know if there is anything magical, but we have done a campaign to talk about the program and its selling points. Michigan has a comprehensive MOR, including settled water turbidity, so it didn’t seem that we were asking for much more than what they were already doing. Staff is selling the program when they’re out working with systems. We’ve also used our AWWA section meeting to promote the program. We use a standard para­graph in our sanitary survey cover letter requesting water treatment plants start submitting IFE data if they are not already doing so, then try to follow up with them. So, persistence may be another strategy.

1. **Janine question for Connecticut – States providing CEUs for AWOP tools, I would like information on how you are doing this. I’m always looking for ideas. Are there specific Special Studies that systems are required to conduct, or can they conduct their own?**

* Mandy: We have an application that I can put in the *chat*, but I believe this applies to any study that the system is going to do to benefit their plant. They must be pre-approved and summarize their findings. They are limited in how many CEUs they can obtain by this route; I believe it is 30% of their required CEUs.

1. **Candy – I am interested in what incentives New Jersey has come up with for their plants to optimize.**

* This is a goal for our program to come up with incentives. We are looking for ideas.

1. **Bob Clement – Since you are in the area of CDC, I am wondering about how to advance this program. Before the pandemic, CDC gave a presentation on how many fatalities are associated with drinking water and these are under-reported. I am wondering if we have investigated teaming up with the CDC’s drinking water analysts to help people under­stand how optimization is directly associated with lowering microbial (and other less known) risks.**

* Rick: In principle, this seems like a good thing to do. I am willing to discuss ideas and think about it.

1. **Val posted a question in the *chat* for South Carolina related to optimization considerations during permitting. Rick had a similar question for Mandy (Connecticut). Any specifics to share?**

* They had about three plants in the last few years that were upgrading their facilities. New Jersey DEP endorses the optimization goals for plants when they upgrade (e.g., encourage filter-to-waste capability, SCADA flexibility. Follow-up question from Rick – Has CT encouraged plants to optimize before they upgrade? Mandy responded that there is nothing formal in place, but they provide technical assistance to their plants, and optimization is encouraged before significant changes are made.

**Region 6/7 Reports:**

1. **Nancy had a question for Aaron in Arkansas – Was there pushback from installing mixers in tanks and what were the impacts?**

* Aaron said that the study was ongoing, so there was not much to report yet. There was some pushback from engineers and tank vendors. They asked them to address how they plan to avoid stagnation in their tanks. Refer to *chat* for additional Arkansas response.

1. **Kevin Anderson – I have concerns about what Iowa presented for evaluating CFE turbid­ity spikes. It is important to understand that a single exposure can cause waterborne ill­ness. If there are pathogens in the source water, there is a correlation between pathogens and turbidity. Spikes should not be dismissed but investigated. They can be due to bub­bles, but not all are due to bubbles. Power surges may indicate outages that result in spikes when the plant comes back online. Spikes in the CFE should be compared to what happened with the IFE turbidity. With all due respect to Iowa, I am not sure that this is in keeping with AWOP principles. I do think the idea of requiring a continuous meter for CFE compliance monitoring is good, though.**

* Iowa did not respond, but Neftali (Region 7) did. They reviewed the rule change and felt that the requirement for continuous monitoring on CFE made the requirement more stringent than the federal rule. They felt it was a clarification of a gray area and supported the change.

1. **Mike Bolf question for Iowa – We occasionally have plants that prefer to analyze with con­tinuous analyzer as opposed to grab samples. Does Iowa have rules for calibration/ verifi­cation for continuous meters being used for CFE?**

* All turbidimeters used for compliance must be verified weekly and calibrated every 90 days. It must be reported on the MOR.

1. **William McClimans question for Iowa (*chat*) – What would happen if an operator removed the filter from service after the first 1 NTU reading but prior to the next 15-minute reading was to be taken?**

* If an individual filter was removed from service after seeing a 1 NTU reading on the CFE, then this would not trigger a violation as long as they did not get a second 15-minute reading on CFE above 1 NTU. Under current rules and EPA guidance, they could have four hours to remove that filter, as CFE compliance can be achieved with 4-hour grab sampling.
* Response from David Simons (Texas): We also look at a single CFE reading (instantaneous or grab samples at regular intervals) above 1.0 NTU as a problem. We do not allow the con­firmed reading concept for CFE turbidity. We only allow confirmed readings for IFE tur­bidity. We recommend that all surface water plants that use online, continuous CFE turbi­dimeters have an automatic plant shutdown well below 1.0 NTU to avoid an instantaneous reading above 1.0 NTU.
* Nancy Feagin (Washington): The main outcome of our data integrity project in Washington was to confirm/verify that all of our systems were reporting the absolute max CFE turbidity ever day (not the max of the 4-hour readings).

1. **Larry asked David (Texas) about some of the common low pressure membrane issues experienced by Texas systems.**

* David responded that they have found a variety of issues, including control systems (SCADA) not functioning correctly and inaccurate LRV setpoints. Texas may be different from other states in that they do not allow the use of vendor-determined LRV values. They only allow use of an upper control limit in pressure decay testing and a verified minimum start test pressure to confirm membrane integrity. Vendors have promoted membranes as a *“push button”* technology, and this is just not the case. Operators have thought that they were doing fine, but when the inspector asked them to run a pressure decay test, they found out their system wasn’t working properly. David will share a link to a document that includes more details on their findings.
* James Macpherson (Oregon): Oregon requires vendors to provide evidence that LRV calcu­lations adhere to the Membrane Filtration Guidance Manual equations.
* Nancy Feagin (Washington): Washington requires systems to report daily direct integrity test results on the MOR.

1. **Bob Clement – I was curious what the tank cleaning frequency was in the Cleveland exam­ple that Oklahoma presented.**

* Rachel responded that she was not sure of the cleaning frequency, but she did not think the older tank had been cleaned due to its general condition and appearance. The newer tank may not have been cleaned yet (she didn’t ask this question), but it was pretty new. Bob referred to a ground water system that he read about in Wisconsin that showed that the longer the tank had been in service, the deeper the sediment. There seem to be some basic criteria that need to be met to show how well the distribution system is performing (e.g., if you don’t clean/maintain your tanks, you don’t have a good idea of how the system is performing).

1. **Aimee White question for Jeff Pompeo on the Navajo-Gallup system (*chat*) – Is the pipe­line going to be re-chlorinated at multiple points or end point? Also, is there any treat­ment at the plant (besides chlorination) that will be geared toward the long travel time (i.e., UV, hydrogen peroxide, powdered activation carbon)?**

* Jeff responded that the plan is for the pipeline to be re-chlorinated at the consecutive con­nection entry points. The treatment plant includes the conventional filtration treatment (coagulation, flocculation, sedimentation, filtration) for removal of particulates, including microbiological contaminants. The conventional filtration treatment is followed by granular activated carbon adsorption treatment (GAC) to reduce total organic carbon, a precursor to disinfection byproducts.

**Region 10 Reports:**

1. **Greg Carroll – Beyond Alaska, how many other AWOP states have adopted the “*no more stringent”* approach?**

* Rick: This would likely require a poll to determine, since we don’t track this at TSC. It is something we have an interest in knowing. Indiana and Virginia indicated that they fall into this category, in addition to Florida. Washington is not *“no more stringent”* but must meet a higher bar if they want to be more stringent.

1. **Joseph McNally question for Johnny – How do you manage to travel for sanitary surveys in a state so massive?**

* Johnny responded that they do have to take dog sled classes to get to their systems 😊. They do rely on third parties to cover all of their water system surveys, but it is still a challenge.

1. **Mike Bolf question for Evan – When you say Oregon requires new MF plants to be LT2 compliant, does that also apply to a water system with a source classified as Bin 1?**

* Yes, all new membranes are required to have LT2 compliant membrane modules. We main­tain a list of modules with verified LT2 compliant challenge studies on our website at https://[www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANREVIEW/Documents/MembraneFilters-VerifiedModels.pdf](http://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANREVIEW/Documents/MembraneFilters-VerifiedModels.pdf). They also have to do daily DITs, have an Upper Control Limit (psi and in most cases LRVambient – LRVcalculated using current operating conditions and the most recent DIT pressure decay rate), IFE turbidime­ters, and do a DIT if IFE NTU exceeds 0.15 NTU for more than 15 minutes.
* We also have LT2 compliant cartridge filters online at: [https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANREVIEW/Documents/CartridgeBagFilters-VerifiedModels.pdf and LT2](https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANREVIEW/Documents/CartridgeBagFilters-VerifiedModels.pdf%20and%20LT2)   
  compliant UV units at: <https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PLANREVIEW/Documents/UVReactors-VerifiedModels.pdf>.
* The lists of LT2 compliant membrane, cartridge, and UV are updated as new systems are submitted for plan review (we only review them if they are proposed for installation), so in most cases, if the cartridge, membrane, or UV is listed, it has been installed in Oregon. We also require LT2 compliant cartridge and UV systems, regardless of Bin classification.
* Bethany Shrodo: Mike, we require all membranes to comply in Pennsylvania, regardless of Bin classification of the water system.

1. **David Simons question for Nancy – Why does Washington prefer slow sand filtration and membranes over rapid rate filtration for smaller PWSs?**

* In our experience, small communities are much more successful in operating those technolo­gies. We do not see the wide swings in performance when operator turnover occurs. We have robust reporting, so we are able to identify and intervene early when issues occur.

1. **Rick question for Nancy – Regarding the x-graph and the trend change due to the data integrity focus, was it difficult to make the data reporting change?**

* Nancy replied that a TA provider informed the state that over half of the water systems were not reporting their turbidity data as required (maximum daily CFE). DOH staff visited the plants and checked on how systems were reporting. They did not have any kickback from this follow-up.

1. **Johnny Mendez question for Nancy – For a small system in Washington using membranes, is the operator certification level required much different than that for a rapid rate plant of similar size?**

* Nancy responded that small rapid rate plants are scored as Level 2 or 3, depending on the filtration rate, but also on the number of separate processes that they have. Small membrane plants are all Level 2. More important is the level of skill and attention required to run a rapid rate plant when compared to a membrane plant. Although turbidity doesn’t have the same significance with membranes as it does for rapid rate filtration, our most recent system to switch from rapid rate to membranes went from a 95 percentile of 0.29 NTU (2017) to 0.01 NTU (2020).
* Johnny: Here in Alaska, we have some direct filtration plants that only require a Level 1 operator. Conventional filtration usually requires a Level 2 or 3, depending on how many chemicals and other processes they have. Membrane plants seem to mostly require a Level 2 operator.