

Source Water Protection Citizen Technical Advisory Committee (CTAC)
Source Water Assessment Plan Update - Subcommittee Meeting

March 28, 2019

Final Meeting Minutes

Meeting Location: Tidewater Utilities Conference Room

WELCOME & INTRODUCTIONS - Douglas E. Rambo, P.G., DNREC, Division of Water

Mr. Rambo called the meeting to order at 10:09 a.m. and welcomed everyone. He asked for introductions around the table. The attendance list is included at the end of the meeting minutes.

REVIEW AND APPROVAL OF THE FEBRUARY 28, 2019 DRAFT MEETING MINUTES

Mr. Rambo asked if anyone had any edits to the February meeting minutes. Mrs. Anita Beckel made one edit on page 7 changing the word “Source” to “Surface”. No other edits were made.

Final meeting minutes are posted online at <https://publicmeetings.delaware.gov/Meeting/62293> .

CONTINUED DISCUSSION ON WATER QUALITY DATA – Steven M. Smailer, P.G., DNREC, Division of Water

SDWIS and “Other Sources of Water Quality Data discussion – Mr. Smailer began by saying, “I guess the best way to put it is I don’t know if they’re necessarily ideas as much as they are questions that I want to pose to the Committee to get thought and dialogue around. Going through and looking at this, the original SWAP Plan contemplated the analytical data, the water quality data, primarily coming from what was available through Public Health sampling and the raw water data coming through in that regard. To that end, we had a very good inter-programmatic discussion last week on looking at some ways of maybe reengaging their inter-departmental efforts to look at that. What I really want to throw out for topic of discussion at this point is as the Department and other people are going through some data management modernization and some other efforts, some mapping capabilities and other components, how would we (as a Source Water Program) want to handle, if we know there’s a wellhead area, we know there’s a five year time of travel and we have water quality data from not Public Health but from say a Tanks site that’s actually there or something that’s not even one of the contaminant layers and somebody has their well tested and we know there’s water quality concerns in the data there, as we have the ability to look at specific locations of water quality data within these source water areas should we or should we not be thinking about that in terms of what we assess will be the Source Water Assessment? Basically if we know there’s water quality concerns in the established wellhead area contributing to this public well, what obligation and what communication do we want as part of the Source Water Reports and what criteria? One hit does not necessarily make it a problem (a series of tests or written confirmatory pieces). Do we collectively as a Program have an obligation to communicate our state of knowledge as it relates to source water quality in that defined area through the Source Water Assessment reports? The

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Department as a whole is going through looking at trying to centralize the analytical data that we capture so it's not just a dot on the map that there's a Super Fund site or a polygon but actually the analytical data from those wells that are there so we have some specific components as it relates to the parameters that we have here. Then there are other efforts that aren't part of what we are and if we go through that, where should we be looking? How far up field do we want to take this?" Mr. Smailer gave an example and then continued, "What's the reality of what we want to be able to say and what we want to communicate?" Mr. Smailer said this is what he wanted to throw out to the Committee for discussion and then stated, "Where we take it is up to you."

Mrs. Beckel said, "My feeling is I think EPA wanted the Source Water Assessments to inform the regulating agency, the PWSS Program or whatever they call it in the State, about issues so that if everything was wonderful you could give water systems monitoring waivers and on the flip side of that it would give them a heads up if there were issues of concern you can let the water system know that this is something that they might want to watch closely." Mrs. Beckel gave an example and then said, "I think they wanted that communication. That was one of the purposes of the Source Water Program."

Ms. Cathy Magliocchetti said, "And I would add that we've been talking about, since this group has been meeting, trying to make those data sets more accessible. And because they're dynamic, instead of just having a report that you're going to have sitting on a shelf to make sure that the public in your regulated community as well as DNREC itself has access to that real time data and how to do that using different GIS layers and those types of things and how transparent you want to make those, it'll only inform your public and your regulated communities. That's the look that we have for the Source Water Assessments moving forward. These documents, as we all realize, are coming up on twenty years old if not more. There are a lot more available tools that we have to make it a more living document and that's what we're hoping will be one of the outcomes of this particular endeavor."

Mr. Smailer said, "I think there are components, too, that looking at if we, and when I say we it's a very global we, become aware of water quality concerns within a water supply area that's already been assessed and some other components from the Program's factor, does that trigger a reassessment? What does that mean? If you see something that was assessed five years ago but now we look at something that happened in that area where we identified issues, what threshold requires that to trigger a reassessment and a recommunication because again we don't want to have programmatic data out there that conflicts with what we had said maybe a year or two prior to our knowing that exists. But at the same time, how we make it so that a single non-verified, non-confirmed piece doesn't just show up and create more of a concern than was warranted from that one component. The conversation is (a) do we want to do something for it and then (b) how do we communicate it and at what levels of thresholds do we have it for triggering action, triggering communication. I just think that having a whole bunch of data from multiple Programs out there overlapping as we're talking about, we should take this into consideration as opposed to just sticking our heads in the sand."

Mrs. Beckel said, "I agree. I think a good example would be the City of New Castle's wells. On the assessment that was done a long time ago the wells were confined and now we know that

they have VOC's and they've had to install treatment for PFAS and so it would probably be a good time to relook at an assessment like that so it matches more with what's going on in reality."

Mr. Smailer said, "I don't disagree. I think that's somewhat easier in that the water system itself has the water quality data to deal with it." Mrs. Beckel added, "They're ahead of the curve with monitoring their own self." Mr. Smailer said, "Yes, but the question is external triggers that are beyond the water system and what do we do about that."

Ms. Magliocchetti said to Mr. Smailer, "To just go back to your other point about the assessment, you won't necessarily be continually updating the assessment but because the data sets that you're drawing on are more active it might inform better in your Source Water Protection planning as opposed to you're not going to be retriggering assessments of those areas but the data that you are collecting is going to change the way that you're reacting in those areas." Mr. Smailer mentioned that the reassessment might not be a full reassessment. He continued, "It may be an update of some narrative or language that's there just so it doesn't ignore that fact." He added, "It's just these things are becoming more available, more consistently understood by select folks and we just need to be able to account for that."

Mr. Smailer asked Mr. Keith Mensch, "EPA and through the other standards the requirements for what the rolling average is, how many detects and other components that are there for what is a concern, what is a violation of that piece. Do you see that same kind of criteria methodology applying to non-produced water?" Mr. Smailer continued to discuss with an example. Mr. Mensch responded, "So you're talking about drinking water as it applies to source water in terms of an area that's not used actively for drinking water?" Mr. Smailer responded, "No, in an area that is but we may not see it in the produced water. You see it in the raw water, the source water area. You don't see it in what's pumping out of that well yet." Mr. Mensch said, "I'd be hesitant to apply the exact same. Because they're very rule specific and it's meant for public water systems not necessarily what's in the ground." Mr. Smailer said, "I don't disagree. I'm just saying that that just means again you don't want somebody to sit there and think one well that had one hit of high sodium in this well for whatever reason is truly problematic to the drinking water system that has no issues there." Mr. Smailer referred to the Tiered Susceptibility topic of discussion on the meeting agenda. He said, "You don't want to create a hysteria based on one or even two pieces of raw water that's in there but when does that one, two, three, four, five, six become enough that it is significant to communicate across." Mr. Mensch said, "I'd be hesitant to apply the same logic across the board, anyway. I mean unless it makes sense to in certain situations." Mr. Smailer said, "There may be certain perimeters it does. I don't know. But I think if looking at trying to communicate the open record set of any analytical data we have in the contributing source water area I think we have to do that carefully with looking at those types of thresholds and what those requirements are."

Mrs. Laura Mensch said, "It seems like one thing we could do if we do break it out to tiers, you could take the tier one and establish action levels for so many hits over a certain period of time at a certain level, percentage of MCL, etc. and then have a set SOP as to what actions to do at that point." Mr. Smailer said, "In the current plan, it just anticipated having 50% of the MCL or exceeds the MCL but it didn't even have how many occurrences and some other components so

it was kind of out of sync with that. So to me it's maybe you have those tiers." He continued, "But I don't want to go in just saying a dot on the map creates a crisis. On the flip side of it, the intent of the Safe Drinking Water Act amendments that couple the CCR's and the Source Water Assessments, the CCR's are very good in saying this is what is being delivered, this is what you're consuming, this is the other components. The Source Water Assessments coupled with that the intent, in my understanding, has always been that this is the things in your area that you may want to be aware of, consider, plan for. There's a lot of power in that." He added, "I think we just want to get ahead of people saying I have a sample, my well has detected (something), shut this water system down. We don't want that to happen." Mrs. Mensch stated, "I think it's our responsibility to provide the interpretation of that so that would be building in the levels or tiers and the frequency. That would be our way of interpreting the risk for the citizen."

Ms. Magliocchetti said, "And we've also talked a little bit about how the CCR's are presented, particularly in the context of the Source Water Assessment information and how utilities can use that to give the public assurance at the same time providing them the information that's required." Mr. Smailer said, "That's an interesting point." Mr. Smailer asked Mr. Rambo, "So the CCR's are required to basically link or reference the Source Water Assessments. But I don't think our Source Water Assessments reference the CCR's as directed." Mr. Rambo replied, "Not as directly. We do in our Treatment Section for the community systems state that the CCR is what reflects the finished water or the water system. We also state in our Water Quality Section that even though a contaminant has been detected it does not necessarily mean that it is a violation of drinking water standards." Mr. Smailer then asked Mrs. Beckel, "Going back to the link with Source Water Assessments and the CCR's, when the State is publishing the Source Water Assessments and they can be linked and other pieces there, that directional linkage is fine. But we can't assume the opposite is true. Some of these small systems that have a CCR they may not have a web presence at all. Would that be a correct statement?" Mrs. Beckel answered, "Correct." Mr. Smailer continued, "And so that CCR may only be created or distributed to their consumer but not directly linked." Mrs. Beckel replied, "Yes." Mr. Smailer and Mrs. Beckel continued to discuss how CCR's are returned and can be distributed. She said some may post on a community bulletin board. Mr. Mensch added, "It's up to each water system as to how they are distributed." Mrs. Beckel said, "The larger systems definitely like the web presence and not having to mail them or anything like that. It's not a requirement that they're electronic. Some of our water systems they don't even want them electronically. They wouldn't know what to do with them."

Mr. Rambo asked Mr. Smailer, "Would that be an opportunity for us to collaborate with Rural Water and the Office of Drinking Water and have the corresponding CCR with the Source Water Assessments?" Mr. Smailer answered, "I think the synergy between those entities is fine but ultimately it's up to the system as to whether they want that there. I think we can have the dialogue and if they agree to it we can figure out what to do with it but ultimately it's up to the individual system to make that decision." Mrs. Beckel said, "And we are definitely just a subset of systems that come and ask for assistance." Mr. Rambo asked Mr. Mensch, "Could this be an opportunity for us to reach out to the water systems through your newsletter that you put out?" Mr. Mensch replied, "Yeah, I mean we can use that for things like this." Mr. Mensch added they would need to have further discussions on it first. Mr. Smailer added, "I think the simplest way

of looking at it, too, is there's not a definitive linkage from the Source Water assessment to an absolute digital CCR."

Ms. Mary Neutz said, "Does the assessment have an appendix that would list all the PWS ID's and the corresponding source water? Because if you have that then a customer could just refer back to the Drinking Water Watch web page." Mr. Mensch added, "Drinking water wise." Ms. Neutz said, "Yeah." She continued, "So it wouldn't be the CCR but it would kind of put them on a path that if they were engaged and wanted to find out more about their drinking water they could use that information. So that might be one avenue." Mr. Rambo said, "That's an interesting thing because on the cover of all our Source Water assessments is the PWS ID. If we did a hyperlink to Drinking Water Watch to that water system from the PWS ID as part of the digital assessment." Ms. Neutz said, "And even if they didn't find the data that they were looking for it would then give them the information of who to contact at their water system to get the CCR or to get the information they are looking for." Mr. Mensch added, "And you're saying where to have this hyperlink specifically?" Mr. Rambo said, "On our Source Water Assessment the front cover page has the name of the water system, the PWS ID, and the date that the assessment went final." Mr. Mensch said, "I'm hesitant on hyperlinks because they change." Ms. Neutz said, "It could be like an appendix with all the PWS ID's and then maybe just one reference on the appendix to the Drinking Water Watch website."

Mr. Smailer said, "It's an interesting topic of a portion of a Source Water Assessment that doesn't exist in our current Plan which is if we want to think about this not in terms of a .pdf that's generated with a static embedded hyperlink to something but an external resources portion of the assessment itself if we want to think about this being a digital story map or whatever there's the maintenance of that and we can maintain that versus documents that are generated, published, and sent into the wild with an embedded hyperlink. To me it's a conversation about how would we want to include things available, external linkages, to our assessments." Mr. Rambo said, "And to that point it could actually be a reference in the references section. If we site a DGS publication there's a hyperlink to it, if we site Drinking Water Watch we could even list Drinking Water Watch as a reference and it just takes it to the homepage for that." Mrs. Beckel said, "I don't think you could easily take it to a water system because I think when you get to that part you have to pick your water system and then pick your date range and what year you want the CCR. So you wouldn't want to take them down quite to that level but you might want to take them to the Drinking Water Watch page and some instructions about how to get to the CCR part." Mr. Mensch said, "Even the main Drinking Water Watch homepage will likely change its address in the next couple of years." Mr. Smailer said, "So what we should do is just create a web link page that we link to and then manage the links on the web page." Discussion continued.

Mr. Smailer stated, "I think the discussion about water quality components needs to be included as we go through the next category (on the agenda) talking about the Tiered Susceptibility. What level of threshold, standards, components, what do we want to think about as we're looking at the various tiers."

Mrs. Samantha Smith asked, "Are the CCR's that go out are they required to have the Source Water Assessments included?" Mrs. Beckel answered, "They have a paragraph in the CCR

about their Source Water Assessment, where it's available, the source of their water, so a lot of water systems get down to what their aquifer is and then either a susceptibility or vulnerability determination and they are supposed to mention it in the CCR. So their CCR's are updated every year with a year's water quality results but usually that Source Water Assessment paragraph stays pretty static unless they get a new well or it's reassessed." Mrs. Beckel addressed the last topic going back to the Drinking Water Watch and stated she believes it only makes water tests available back to around 2000. She said, "I don't know if that's when SDWIS State went live. There are historical results in SDWIS State that don't show up in Delaware Drinking Water Watch." Mr. Mensch said, "I know there's results back to the 1990's on SDWIS State. I've never checked to see if those were on Drinking Water Watch." Mrs. Beckel said, "I don't know why Drinking Water Watch cuts them off at about 2000." Discussion continued.

Review of Updates to Table 4-1 (Tentative / Pending Input from Committee) - Mr. Rambo addressed the Committee that next on the agenda they are going to revisit *Table 4.1 Contaminants of Concern*. He said, "There's been some changes in MCL's since the Plan was put together back in 1998/1999. However, there's been a lot more as far as Contaminants of Concern that have been added to the list. One of the tasks that I asked Laura (Mrs. Mensch), Todd (Mr. Keyser), and Keith (Mr. Mensch) to look into was a way to update this table to reflect the changes that have taken place in the various Programs and see where it needed to be updated. (Mr. Rambo distributed and discussed changes presented by Mrs. Mensch, Mr. Keyser, and Mr. Mensch. They are attached.)

Mr. Rambo said, "Keith (Mr. Mensch) recently submitted edits and updated the table and I've tried to incorporate some of Todd (Mr. Keyser) and Laura's (Mrs. Mensch) comments into the table that Keith (Mr. Mensch) prepared." Mr. Rambo asked Mr. Mensch if he would like to speak to the Committee regarding the changes. Mr. Mensch said, "There were quite a few changes in the MCL's and even in how the substances were worded." Mr. Mensch presented examples and also said where he made some grammatical corrections as well. He added, "In terms of the table, I eliminated the Contaminant Category column because they're already grouped and I think the intention was to combine the groupings and get rid of that column but we can certainly add it back if we feel it's necessary. I changed little things like the column that's called Natural or Synthetic Substance. I just changed it to Substance Origin." Mr. Mensch said that's really most of what he changed and then added he also changed it from (Microsoft) Word to Excel. Mrs. Beckel added, "It looks like some metals might be missing off the Inorganic Contaminants." She gave nickel as an example. Mr. Mensch asked if it was on the previous table and he said there could be some not on his new table if they weren't on the previous table and added, "We can certainly add things like that." Mrs. Beckel continued to discuss missing metals. Mr. Smailer and Mrs. Beckel discussed the possibility of metals being regulated after the original Plan started in 1995. Mr. Rambo addressed Mrs. Beckel and said, "This would be a good opportunity for you to review what's listed." Mrs. Beckel asked Mr. Mensch if he could e-mail her the table he created to she could edit and return to him. Mrs. Beckel also mentioned updating the unregulated contaminants like the disinfection byproducts. Mr. Smailer again addressed the tiers and how to communicate that to the public and how the narrative is important.

Mr. Rambo addressed Mr. Mensch, "Another question that came up was including the other EPA 537 PFAS compounds in the list. Just the fifteen that are on the 537." Mr. Mensch said, "This

table is for Contaminants of Concern. Are all fifteen of them a concern in Delaware?” Mr. Ross Elliott replied, “The compounds are still technically unregulated but a concern.” Mr. Mensch asked Mr. Elliott, “All the data I’ve seen on all the PFAS compounds the highest numbers are always PFOS or PFOA.” Ms. Mary Neutz said, “Not in the data I’ve seen.” Mrs. Neutz, Mr. Elliott, and Mr. Mensch continued to discuss examples and Ms. Neutz said, “There is very limited data on this topic.” Discussion continued.

Mrs. Mensch asked, “But are we moving forward with including a method or are we going to keep that in an appendix?” Mr. Rambo replied, “That will be an appendix.” Mrs. Mensch said, “Because I know Todd (Mr. Keyser) had listed some methods that I don’t use.” Mr. Mensch stated, “Whatever we do we have to have a logic to it that’s specific to Delaware because the methods will change, they’ll start detecting things lower, they’re going to add onto the method. I would hesitate to do it by the method because that’s what it is right now.” Mr. Smailer said, “The narrative of how we communicate what it means with the tier that is emerging contaminants is very important.” He added that twenty years from now that list will be different again. He said, “What we say and what we define as emerging contaminants we want to be specific enough that we capture the current state of knowledge but flexible enough that it is expansive enough to incorporate future things without needing to go back and reassess or republish what it is we’re doing.” Mrs. Mensch asked, “Do you have a mechanism to update just this table? In other words, instead of doing an overhaul or public comment, etc. do you have a mechanism and go in and just update this table as needed?” Mr. Rambo said, “We can incorporate that into the Plan.”

Mr. Smailer said, “My perception is that it’s up to us how we want to incorporate the emerging contaminants into our Source Water Plan and if we say emerging contaminants is whatever’s on this list whenever you happen to look at this list that’s probably okay. We just need to define what that is.” Mr. Smailer continued to discuss and asked Ms. Magliocchetti if we have that flexibility to do this and she said, “Yes.” Mr. Smailer continued, “I like that in some ways because if something goes on that list we can put the narrative as to what that means.” He added, “The action items then would be how do we establish the list of what those emerging contaminants are that are important to Delaware, how we want to communicate what that is and the process by which we would agree to the standards that which that list is maintained.” Mr. Matt Grabowski said, “I think that becomes like an action step for this group moving forward once the Plan’s revised and updated this Subcommittee could still continue to meet annually and review that list and work as a group to help maintain that list.” Mr. Smailer said, “That does make sense that there is some procedure by which is agreed that these things are added to that list and the narrative that’s associated with it as opposed to just updating later when there’s a new method.” He added, “I do like the preface of keeping it a living thing.” Mr. Elliott added, “I agree.” Discussion continued.

Mr. Rambo said, “One of the changes that Keith (Mr. Mensch) made to the table was the removal of the Contaminant Category and that’s tied to our Susceptibility Assessment.” Mr. Rambo asked Mr. Smailer, “Do we want to put that back in?” Mr. Mensch asked, “How are they grouped? The way that they’re grouped under some of the documentation I think with the EPA is the Contaminant Category would be how they’re grouped in clumps.” Mr. Rambo asked Mr. Smailer if he wanted to go back to the origin. Mr. Smailer said, “That’s a good question. I don’t

know. If I remember correctly, the conversation was of Categories of Contaminants by groupings of potential source.” He continued, “To me, ultimately, there are problems with that and problems with other pieces. What makes the most sense to the target audience that we’re trying to reach?” Mr. Smailer referred back to examples previously made. He continued, “Whatever’s best used to communicate to your intended audience.” Mr. Mensch said, “I found it confusing when the first part of the table says Primary MCL’s.” He continued to discuss.

Mr. Smailer said, “Again going through the agenda it says *Is a Tiered Susceptibility-PMCL/SMCL/Unregulated/emerging contaminants the way to go?* The conversation for the group is is just susceptibility at that level without the actual contaminant category more easily understood? I don’t know the answer to that. That’s for this group to decide.” Mr. Mensch said, “I would like to see VOC’s and SOC’s and metals as categories. Something like that to that effect.” Mrs. Beckel said, “So would you suggest like the secondaries be at the end?” Mr. Mensch said, “Yes, and then unregulated below that.”

Mr. Rambo said, “And getting towards that discussion on the Tiered Susceptibility, I would believe it would be an iterative process where you would do a susceptibility for the primaries, do a second iteration on the secondaries, and a final iteration on the unregulated. And then come up with the concerns for the water systems based upon that.” Mrs. Mensch said, “I’m wondering if that would be the opportunity then to bring in the number of hits in a period.” She continued, “And then result in a certain action.” Mrs. Mensch discussed examples to the Committee. Mr. Rambo said, “I think a lot of that would be based upon how much data we have on an individual water system. If we only have a couple of samples, that method would be a little bit difficult.” Mr. Smailer addressed Mr. Rambo and said, “I don’t disagree but I think the question still has to be answered. Is a couple of samples a problem? It may be a very different problem than a whole bunch of samples that have a hit. I don’t know the answer to that but it’s a good question to ask.” Mrs. Beckel said, “I think the other thing that’s changed between this assessment and last time is that a lot more water systems have treatment. So last time around we were doing a lot of raw or untreated sampling to make sure that people didn’t have an MCL violation or something and now they have the treatment installed and they’re sampling the finished water but not the raw water. So the number of samples with detects is not going to be consistent across water systems to tell you good information about the occurrence of the contaminants in the ground. It’s going to tell you more about how that water system is concerned about their raw water. Because the ones that care might be testing their raw water more frequently to make sure that their treatment can handle it when somebody that doesn’t have the money or the resources or they don’t do any monitoring of their own they’re not going to have any raw water detects because it’s just not sampled.” Mrs. Mensch added, “I think if we go with the matrix it would have to be such that not having any data wouldn’t destroy the matrix. In other words, there would be a way around it.” Mrs. Mensch continued to discuss.

Mr. Smailer referred back to who is the actual intended audience. He added, “What you don’t want to get into the situation is you have a system that’s operating with a high quality treatment but they’re also diligently monitoring the raw water and they have data saying that their raw water hits but they’re absolutely maintaining that because they’re diligent about it. But we don’t want them to look worse than someone that never monitors their raw water. So that’s a very important piece because no matter which audience we don’t want to make a false perception

about somebody doing the right thing.” Mrs. Mensch said, “And that’s the irony because really the consumer if they’re showing that your water’s fine but look at what we had to do to get you there that should be a better story but it ends up being a scarier story.” Mr. Mensch asked, “Is what we intended of the assessments to be utilized by someone wanting to utilize that resource? In other words, if I’m going to build a home somewhere maybe I want to look at a Source Water Assessment nearby to see what’s in the ground. Maybe I need to see which aquifer I need.” Mr. Smailer said, “The original intent of the Source Water Assessments in that regard is directly coupled with, the reason why the delineations have to be made and these things have to be done, was then the Source Water Law it says communities over 2,000 population had to adopt the protective ordinance, thereof. It was to inform local land use discussions in the regard of Source Water protection.” Mr. Rambo said, “Originally the way the Safe Drinking Water Act was written was that a Source Water Assessment was to be used by the consumer to see what was in their water and then if there are issues then they could alleviate grass roots effort to work with regulators to clean up issues in the source so that the supply would improve over time and then the State of Delaware with our Source Water Law tied in the communities of 2,000 or greater.” Mr. Smailer said, “But I don’t know how the substantial implementation criteria for what that meant falls out of that because the substantial implementation of the Source Water Assessments was not intended to track all grass roots, movements, and conversations that were empowered by the data in the Source Water Assessments. It was triggered on the local land use.” Mr. Rambo said, “Our substantial implementation which we defined for EPA was based on the implementation of laws and ordinances by local municipalities and counties to protect the source.” Mr. Smailer then said, “I think the criteria of informing a resource user based on that data is a conversation we can have now that we couldn’t have necessarily twenty years ago because that person putting in their own private well wouldn’t necessarily know exactly what’s where and how it is and which system to go and look at and the other components. That’s probably an intended use that would be beneficial but I don’t think it was fully contemplated when we first did it. It doesn’t mean we shouldn’t be thinking about that now because that goes back to who is our audience?” Mr. Mensch said, “I don’t know if there are other things out there. If I were moving to Delaware maybe I’d think to myself, do I want to have a home on its own well or do I want to tie into a system? What’s in the ground? What do I need to worry about? I don’t know if there’s something else out there at DNREC that has information that would be helpful for that situation.” Mr. Smailer said, “I think for this group whether it should have been a previous conversation or to me there’s an action item on this. Have a discussion on all this.” Mr. Rambo said, “It was actually one of the topics of conversation of our first meeting. Hans (Mr. Medlarz) was very adamant about this.” Mr. Rambo continued, “And I believe one of the things that came out of that was when we do the assessment we’re going to have a report that is geared to the water system and then a story map or something similar that is geared to the general public which is a more readable document with a lot less detail.”

Mr. Smailer addressed Mr. Mensch and said, “To your question, that was also the premise when Source Water Programs had the USGS do those thirty geospatially selected unconfined systems statewide. The premise then was assessing those with the geostatistically drive distribution was an assessment of the unconfined water quality statewide and extrapolation there being that that could be used for those types of inquiries.” Mr. Mensch said, “Okay.” Mr. Smailer continued, “Having said that I doubt a single homeowner putting in a single well has ever read one of those

USGS reports. So it was good intention but again it goes back to the audience and the communication to that audience.”

Mr. Rambo addressed Mr. Smailer and said, “Going back to Table 4.1 the current study that’s going on we may be able to see with respect to the other PFAS compounds if there are any of those other thirteen that may be of concern.” Mr. Smailer replied to Mr. Rambo, “That’s true but we still haven’t communicated that effectively.”

Mrs. Beckel said, “I think the purpose of the Source Water Assessments was to do the inventory of the contaminants in the Source Water area in hopes that some grass roots like communities and the water system’s themselves and the consumers would voluntarily do activities to protect the Source Water. It was odd that EPA required the assessments but not the protection in the Plan and then Delaware went above and beyond to say if you’re of a certain size then you need to have a protection plan.” She continued, “There was some reference back and forth between monitoring waivers.”

Mr. Smailer asked Ms. Magliocchetti, “At least in Region 3 in terms of contaminant inventory, what’s included in the assessment very pre-substantially across the region as far as a level of detail in what’s included?” Ms. Magliocchetti replied, “I wouldn’t say very substantially but there is variability. In terms of the overall context of the assessment, Anita’s (Mrs. Beckel) right there wasn’t much beyond the assessment portion in terms of what communities are required to do. I think the expectation was that a lot of it would be voluntary.” She continued, “I’m not sure that the assessment would be the appropriate resource for a homeowner if they were trying to go to public water supply or private well. I think that would happen at a much more local level.” She continued to discuss.

Mr. Smailer said, “I think part of that is the quality of Delaware. We have some level of specificity at the State level because of our size and some level of detail at the State level because of our size but we don’t have the ability to do it at the local level.” He continued to discuss. Mrs. Mensch said, “I think the citizen would have to know a lot in order to even think about finalizing this information.” She continued to discuss.

Mr. Smailer said, “And for the group, there’s another different kind of component of that at the Department level. Every well that goes in has to be permitted. When the Department does the well permitting, they get every well permit, even the non-potables to some extent because of the potential migration. They’re reviewed against very much the same data layers that we’ve been talking about in terms of the contaminant inventory that’s here. There’s a radial search. They put a dot on the map, etc. Certain programs like Tanks and the Super Fund site have their data linked to the data that’s used for that. Other Programs that data’s old and more static. Yet it’s a Delaware thing. So we go in and put a dot on the map and do that search. The reality there is that that interaction with that data is done by the well driller not the property owner. Not the ultimate consumer.” He continued, “How that ends up being communicated to the consumer is something that we need to address.” He added, “To me there are pieces of what we assemble for Source Water and how we can apply that in your business process for any potable well going in is something we have the capability to doing some time.” He continued to discuss and again stated the communication to the end user is not given and Mr. Mensch said that’s been a problem

and gave examples. Mr. Smailer and the Committee continued to discuss how to communicate to the public.

Ms. Nicole Minni addressed Mr. Smailer and said, “I was just thinking about instances that I’ve heard about with Blades and Millsboro and if they do find a contaminant what to do about it. What is the next step. I think that’s where you hit home with the citizens. What do I do if we find out there’s contaminants in our water. That way you take away the fear factor and you have an action plan of how to proceed forward.” She continued to discuss. Mr. Smailer asked Mr. Mensch, “The contingency planning for the public water systems, what are the requirements there? I’m not talking about the domestics, just the publics.” Mr. Mensch replied, “Requirements is a strong word. They are supposed to have the technical manager to be able to respond to such a situation. That’s not regulatory required per say.” He continued to discuss and added, “In terms of a regulatory requirement to have an Emergency Response Plan that’s not there.” The Committee continued to discuss steps to take to reduce the fear factor with the public.

Mr. Rambo ended the meeting by asking the Committee to look more in depth at the tiers and Table 4.1

OPEN DISCUSSION

None. Mr. Rambo mentioned there is no meeting in April and the next meeting will be at the end of May.

ADJOURN – Douglas E. Rambo, P.G., DNREC, Division of Water

Meeting adjourned at 11:33 a.m.

These minutes are not intended to be a detailed record. They are for the use of the Source Water Assessment and Protection Program, Source Water Assessment Plan Subcommittee members in supplementing their personal notes and recall of Committee discussions and presentations and to provide information to Committee members unable to attend. Minutes recorded and submitted by Kimberly Burris.

Attendees are listed below alphabetically, last name first:

Beckel, Anita – Delaware Rural Water Association
Brown, Patrick – Sussex County Engineering
Bryan, Walt – Owner of Walt Bryan Enterprises
Burris, Kimberly – DNREC, Division of Water, Administration
Elliott, Ross – DNREC, Division of Waste & Hazardous Substances, Tank Management Branch
Grabowski, Matthew – DNREC, Division of Water, Water Supply Section Manager
Magliocchetti, Cathy – U.S. EPA Region 3
Mensch, Keith – Division of Public Health, Office of Drinking Water
Mensch, Laura – Department of Agriculture
Minni, Nicole – Water Resources Agency
Neutz, Mary – City of Wilmington

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March 28, 2019

Rambo, Douglas – DNREC, Division of Water, Source Water Protection Program
Smailer, Steven – DNREC, Division of Water
Smith, Samantha – DNREC, Division of Water, Source Water Protection Program

Keyser, Todd A. (DNREC)

From: Rambo, Douglas E. (DNREC)
Sent: Tuesday, February 19, 2019 10:39 AM
To: Keyser, Todd A. (DNREC); Mensch, Laura (DDA); Mensch, Keith (DHSS)
Subject: Source Water Assessment Plan Table 4-1.docx
Attachments: Table 4-1.docx

SIRS - BCEE
- PFAS

Switch-MessageId: 161664ca72c44a50ac51507d13fecc5f

Todd, Laura, Keith,

Attached is Table 4-1 – the Analytes table from the Source Water Assessment Plan.

Todd, do you think that you could check with the SIRS, RCRA and TMS Hydros/ES's to see what VOC's / other organic substances should be included in the table? Some of the things that have popped up in Delaware since 1999 are the BCEE / PFAS events that aren't reflected in the table.

Laura – could you do the same with the Pesticide list in the table and see what needs updating per your program? I know that there are more “spot” chemicals like Glyphosate that might need to be considered. Also – would it be possible to secure from you an updated coverage of the Pesticide L,M, & S facilities to update our GIS coverage? If you need a more formal request we can draft one up.

Keith – if you could just verify the PMCL & SMCL contaminants in the table... that would be of great help. I know that they are spread throughout the table – if your shop wanted to make separate Primary and Secondary tables – similar to the layout below – it may help us with the susceptibility ranking as we go through the process later on... Do you think this is possible?

(No Todd - you do not need to list the 4700 individual PFAS compounds that we know about! – Yes, I needed to say that before we had a table that is thicker than the Plan itself!)

If you are able to get updates to me ahead of the February 28th meeting that would be great. Otherwise – when you are able to.

I appreciate your help

Thanks

Doug

SHW
- Dioxin + Furin (methods)
- Cesium Sodium -
- update to State mcl(s)
- add acceptable method for analysis?

small business concerns

mv - cost to add to list
- already captured through method used for "on-lit" contaminants
- All method disclosure

TMS
MTBE / TBA - EPA 826 G

PFAS (by 537 m)

- Add MTBE
- Disinfectant by products
- pharm + chemicals

Speciation

Speciation of Chromium

Substance (1)	Maximum Contaminant Level (MCL), mg/l	Natural or Synthetic Substance	Contaminant Category
Primary MCL's			
• Arsenic (As) <i>200.8</i>	0.05	Natural	Metals
Barium (Ba)	1	Natural	Metals
Cadmium (Cd)	0.01	Natural	Metals
• Chromium (Cr) <i>7196A (HEX)</i>	0.05	Natural	Metals
Fluoride (F)	See regulations (1)	Natural	Other Inorganic
Lead (Pb) <i>6010,</i>	0.05	Natural	Metals
Mercury (Hg) <i>6020,</i>	0.002	Natural	Metals
Nitrate Nitrogen (NO ₃ -N) <i>300.1 7000,</i>	10	Natural	Nutrient
Selenium (Se) <i>200.8 200</i>	0.01	Natural	Metals
Silver (Ag) <i>200.8</i>	0.05	Natural	Metals
Turbidity <i>180.1</i>	See regulations (1)	-	Other Inorganic
Secondary MCL's			
Chloride (Cl) <i>300.1</i>	250	Natural	Other Inorganic
Color <i>2120B</i>	15 color units	-	Other Inorganic
Copper (Cu) <i>200.8</i>	1	Natural	Metals
Corrosivity <i>150.1</i>	See regulations (1)	-	Other Inorganics
Foaming Agents <i>5540C</i>	0.5	Synthetic	Other Organic
Iron (Fe) <i>200.8</i>	0.3	Natural	Metals
Manganese (Mn) <i>200.8</i>	0.05	Natural	Metals
Odor <i>2150B</i>	3 odor number	-	-
pH <i>150.1</i>	6.5 - 8.5	Natural	Other Inorganic
Sulfate (SO ₄) <i>300.1</i>	250	Natural	Other Inorganic
Total Dissolved Solids (TDS) <i>2540C</i>	500	Natural	Other Inorganic
Zinc (Zinc) <i>200.8</i>	5	Natural	Metals
Sodium (Na) <i>200.8</i>	See regulations (1)	Natural	Metals
Microbiological Contaminants			
Total Coliform Bacteria <i>9222B,C</i>	See regulations (1)	-	Pathogen
Fecal Coliforms/E.coli <i>4227B,02</i>	Free of bacteria	-	Pathogen
Cryptosporidium <i>1622</i>	EPA regulations pending	-	Pathogen
Giardia lamblia <i>LAMBLEIA 1623</i>	See regulations (1)	-	Pathogen
Radionuclides			
Radium 226 and 228 <i>7500C,D</i>	5 pci/l	-	Other Inorganic
Gross Particle Activity <i>7110B</i>	15 pci/l	-	Other Inorganic
Tritium <i>75003HB</i>	20,000 pci/l	-	Other Inorganic
Strontium <i>7500-5PB</i>	8 pci/l	-	Other Inorganic
Iodine 131 <i>4745-0B</i>	See regulations (1)	-	Other Inorganic
Cesium 134 <i>7120</i>	See regulations (1)	-	Other Inorganic
Radon <i>115 RADON-222</i>	EPA regulations pending	-	Other Inorganic
1) Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water Systems, Revised March 31, 1991			
			- Denotes Combined Sources

Substance (1)	Maximum Contaminant Level (MCL), mg/l	Natural or Synthetic Substance	Contaminant Category
Total Trihalomethanes (TTHM)	0.1	Synthetic	Other Organic
Volatile Organic Chemicals (VOCs)			
benzene	524.2	TMS* 0.005	Pet. Hydrocarbons
Carbon tetrachloride	8260	0.005	Other Organic
Ortho-dichlorobenzene		0.6	Other Organic
Para-dichlorobenzene		0.075	Other Organic
1,2-dichloroethane		0.005	Other Organic
1,1-dichloroethene		0.007	Other Organic
Cis-1,2-dichloroethene		0.07	Other Organic
Trans-1,2-dichloroethene		0.1	Other Organic
dichloromethane		0.005	Other Organic
1,2-dichloropropane		0.005	Other Organic
ethylbenzene		0.7	Pet. Hydrocarbons
Monochlorobenzene		0.1	Other Organic
styrene		0.1	Other Organic
Tetrachloroethene		0.005	Other Organic
toluene		1	Pet. Hydrocarbons
1,2,4-trichlorobenzene		0.07	Other Organic
1,1,1-trichloroethane		0.2	Other Organic
1,1,2-trichloroethane		0.005	Other Organic
trichloroethene		0.005	Other Organic
vinyl chloride		0.002	Other Organic
total xylene		10	Pet. Hydrocarbons
Unregulated Contaminants			
bromobenzene	524.2	Synthetic	Other Organic
Bromochloromethane		Synthetic	Other Organic
Bromodichloromethane		Synthetic	Other Organic
bromoform		Synthetic	Other Organic
bromomethane		Synthetic	Other Organic
n-butylbenzene		Synthetic	Other Organic
sec-butylbenzene		Synthetic	Other Organic
Tert-butylbenzene		Synthetic	Other Organic
chloroethane		Synthetic	Other Organic
chloroform		Synthetic	Other Organic
chloromethane		Synthetic	Other Organic
2-chlorotoluene		Synthetic	Other Organic
4-chlorotoluene		Synthetic	Other Organic
Dibromochloromethane		Synthetic	Other Organic
1,2-dibromo-3-chloropropane		Synthetic	Other Organic
1) Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water Systems, Revised March 31, 1991			

TMS* typically VOC is via 8260 but we also accept 524.2, 8270 for PAHs or 4030, 4035 and 8015 for TPH

Substance (1)	Maximum Contaminant Level (MCL), mg/l	Natural or Synthetic Substance	Contaminant Category	
Unregulated Contaminants (con't.)				
1,2-dibromoethane	524.2	Synthetic	Other Organic	
Dibromomethane		Synthetic	Other Organic	
1,3-dichlorobenzene		Synthetic	Other Organic	
Dichlorodifluoromethane		Synthetic	Other Organic	
1,1-dichloroethane		Synthetic	Other Organic	
1,2-dichloropropane		Synthetic	Other Organic	
2,2-dichloropropane		Synthetic	Other Organic	
1,1-dichloropropene		Synthetic	Other Organic	
Cis-1,3-dichloropropene		Synthetic	Other Organic	
Trans-1,3-dichloropropene		Synthetic	Other Organic	
Hexachlorobutadiene	525	Synthetic	Other Organic	
Isopropylbenzene	524.2	Synthetic	Other Organic	
4-isopropyltolulene		Synthetic	Other Organic	
naphthalene	524.2 OR 525	Synthetic	Other Organic	
Propylbenzene	524.2	Synthetic	Other Organic	
1,1,1,2-tetrachloroethane		Synthetic	Other Organic	
1,1,2,2-tetrachloroethane		Synthetic	Other Organic	
1,2,3-trichlorobenzene		Synthetic	Other Organic	
Trichloropropane		Synthetic	Other Organic	
1,2,4-trimethylbenzene		Synthetic	Other Organic	
1,3,5-trimethylbenzene		Synthetic	Other Organic	
o-xylene		Synthetic	Pet. Hydrocarbons	
m-xylene		Synthetic	Pet. Hydrocarbons	
p-xylene		Synthetic	Pet. Hydrocarbons	
Pesticides, PCBs and Other Organics				
Alachlor	508.1	0.002	Synthetic	Pesticide
Aldicarb	538	0.003	Synthetic	Pesticide
Aldicarb Sulfone	538	0.003	Synthetic	Pesticide
Aldicarb Sulfoxide	538	0.003	Synthetic	Pesticide
Atrazine	508.1	0.003	Synthetic	Pesticide
Benzo(a)pyrene	525.2	0.0002	Synthetic	Other Organic
Carbofuran	531.1	0.04	Synthetic	Pesticide
Chlorodane	508.1	0.002	Synthetic	Pesticide
Dalapon	6640	0.2	Synthetic	Pesticide
Di(2-ethylhexyl) adipate	525.2	0.4	Synthetic	Other Organic
Di(2-ethylhexyl)phthalate	525.2	0.006	Synthetic	Other Organic
Dibromochloropropane	524.2	0.0002	Synthetic	Pesticide
Dinoseb	6640	0.007	Synthetic	Pesticide
Diquat	549.2	0.02	Synthetic	Pesticide
2,4-D	6640	0.07	Synthetic	Pesticide
1) Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water Systems, Revised March 31, 1991				

Substance (1)	Maximum Contaminant Level (MCL), mg/l	Natural or Synthetic Substance	Contaminant Category
Pesticides, PCBs and Other Organics			
Endothall <i>548.1</i>	0.1	Synthetic	Pesticide
Endrin <i>508.1</i>	0.002	Synthetic	Pesticide
Ethylenedibromide (EDB) <i>524.3</i>	0.00005	Synthetic	Pesticide
Glyphosphate <i>66518</i>	0.7	Synthetic	Pesticide
Heptachlor <i>508.1</i>	0.0004	Synthetic	Pesticide
Hepachlor epoxide <i>508.1</i>	0.0002	Synthetic	Pesticide
Hexachlorobenzene <i>508.1</i>	0.001	Synthetic	Pesticide
Hexachlorocyclopentadiene <i>508.1</i>	0.05	Synthetic	Pesticide
Lindane <i>508.1</i>	0.0002	Synthetic	Pesticide
Methoxychlor <i>508.1</i>	0.04	Synthetic	Pesticide
Oxamyl (Vydate) <i>6610B</i>	0.2	Synthetic	Pesticide
Pentachlorophenol <i>525.2</i>	0.001	Synthetic	Pesticide
Picloram <i>6640B</i>	0.5	Synthetic	Pesticide
Polychlorinated biphenyls (PCBs) <i>640/1668</i>	0.0005	Synthetic	PCB
Simazine <i>508.1</i>	0.004	Synthetic	Pesticide
2,3,7,8-TCDD (Dioxin) <i>1613B</i>	3×10^{-8}	Synthetic	Pesticide
Toxaphene <i>508.1</i>	0.003	Synthetic	Pesticide
2,4,5-TP (Silvex) <i>6640</i>	0.05	Synthetic	Pesticide

1) Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water Systems, Revised March 31, 1991

Table 4-1 Contaminants of Interest

DHSS - ODW
 DDA
 DNREC - TMB
 DNREC - SIRS

Substance	Standard (mg/L, unless otherwise indicated)	Standard Classification	Substance Origin
<u>Inorganic Contaminants</u>			
Arsenic (As)	0.010	MCL ⁽¹⁾	Natural
Barium (Ba)	2	MCL ⁽¹⁾	Natural
Cadmium (Cd)	0.005	MCL ⁽¹⁾	Natural
Chromium (Cr)	0.1	MCL ⁽¹⁾	Natural
Fluoride (F)	2.0	MCL ⁽¹⁾	Natural
Lead (Pb)	0.015	AL ⁽²⁾⁽³⁾	Natural
Mercury (Hg)	0.002	MCL ⁽¹⁾	Natural
Nitrate Nitrogen (NO ₃ -N)	10	MCL ⁽¹⁾	Natural
Selenium (Se)	0.05	MCL ⁽¹⁾	Natural
Turbidity	See regulations ⁽²⁾		Combined Natural/Synthetic
Cesium	N/A	N/A	Natural
<u>Secondary Contaminants</u>			
Chloride (Cl)	250	SMCL ⁽⁴⁾	Natural
Color	15 color units	SMCL ⁽⁴⁾	Combined Natural/Synthetic
Copper (Cu)	1.0	SMCL ⁽⁴⁾	Natural
Corrosivity	Non-corrosive	SMCL ⁽⁴⁾	Combined Natural/Synthetic
Foaming Agents	0.5	SMCL ⁽⁴⁾	Synthetic
Iron (Fe)	0.3	SMCL ⁽⁴⁾	Natural
Manganese (Mn)	0.05	SMCL ⁽⁴⁾	Natural
Odor	3 threshold odor number	SMCL ⁽⁴⁾	Combined Natural/Synthetic
pH	6.5 - 8.5	SMCL ⁽⁴⁾	Natural
Silver (Ag)	0.1	SMCL ⁽⁴⁾	Natural
Sulfate (SO ₄)	250	SMCL ⁽⁴⁾	Natural
Total Dissolved Solids (TDS)	500	SMCL ⁽⁴⁾	Natural
Zinc (Zinc)	5	SMCL ⁽⁴⁾	Natural
Sodium (Na)	See regulations ⁽²⁾		Natural
<u>Microbiological Contaminants</u>			
Total Coliform Bacteria	See regulations ⁽²⁾		Combined Natural/Synthetic
<i>E. coli</i>	Negative	MCL ⁽¹⁾	Combined Natural/Synthetic
<i>Cryptosporidium</i>	See regulations ⁽²⁾		Combined Natural/Synthetic
<i>Giardia lamblia</i>	See regulations ⁽²⁾		Combined Natural/Synthetic
<u>Radionuclides</u>			
Radium 226 and 228 (combined)	5 pci/l	MCL ⁽¹⁾	Combined Natural/Synthetic
Alpha Particles	15 pci/l	MCL ⁽¹⁾	Combined Natural/Synthetic
Beta Particles and Photon Emitters	4 mRem/yr	MCL ⁽¹⁾	Combined Natural/Synthetic
⁽¹⁾ Maximum Contaminant Level ⁽²⁾ Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water ⁽³⁾ Action Level ⁽⁴⁾ Secondary Maximum Contaminant Level ⁽⁵⁾ Lifetime Health Advisory			

Need Speciation As(III) As(V)?

Need Speciation Cr-6?

DNREC - SIRS

Substance	Standard (mg/L, unless otherwise indicated)	Standard Classification	Substance Origin
Disinfection Byproducts			
Haloacetic Acids (HAA5)	0.060	MCL ⁽¹⁾	Synthetic
Total Trihalomethanes (TTHM)	0.080	MCL ⁽¹⁾	Synthetic
Volatile Organic Compounds (VOCs)			
Benzene	0.005	MCL ⁽¹⁾	Synthetic
Carbon tetrachloride	0.005	MCL ⁽¹⁾	Synthetic
Ortho-dichlorobenzene	0.6	MCL ⁽¹⁾	Synthetic
Para-dichlorobenzene	0.075	MCL ⁽¹⁾	Synthetic
1,2-dichloroethane	0.005	MCL ⁽¹⁾	Synthetic
1,1-dichloroethene	0.007	MCL ⁽¹⁾	Synthetic
Cis-1,2-dichloroethene	0.07	MCL ⁽¹⁾	Synthetic
Trans-1,2-dichloroethene	0.1	MCL ⁽¹⁾	Synthetic
Dichloromethane	0.005	MCL ⁽¹⁾	Synthetic
1,2-dichloropropane	0.005	MCL ⁽¹⁾	Synthetic
Ethylbenzene	0.7	MCL ⁽¹⁾	Synthetic
Monochlorobenzene	0.1	MCL ⁽¹⁾	Synthetic
Methyl Tertiary Butyl Ether (MTBE)	0.01	MCL ⁽¹⁾	Synthetic
Styrene	0.1	MCL ⁽¹⁾	Synthetic
Tetrachloroethene	0.001	MCL ⁽¹⁾	Synthetic
Toluene	1	MCL ⁽¹⁾	Synthetic
1,2,4-trichlorobenzene	0.07	MCL ⁽¹⁾	Synthetic
1,1,1-trichloroethane	0.2	MCL ⁽¹⁾	Synthetic
1,1,2-trichloroethane	0.005	MCL ⁽¹⁾	Synthetic
Trichloroethene	0.001	MCL ⁽¹⁾	Synthetic
Vinyl Chloride	0.001	MCL ⁽¹⁾	Synthetic
Total Xylene	10	MCL ⁽¹⁾	Synthetic
<i>Tertiary amyl methyl ether (TAME)</i>	<i>N/A</i>	<i>N/A</i>	<i>Synthetic</i>
<i>tert-butyl alcohol (TBA)</i>	<i>N/A</i>	<i>N/A</i>	<i>Synthetic</i>
Unregulated Contaminants			
Bromobenzene	N/A	N/A	Synthetic
Bromochloromethane	N/A	N/A	Synthetic
Bromodichloromethane	N/A	N/A	Synthetic
Bromoform	N/A	N/A	Synthetic
Bromomethane	N/A	N/A	Synthetic
n-butylbenzene	N/A	N/A	Synthetic
sec-butylbenzene	N/A	N/A	Synthetic
Tert-butylbenzene	N/A	N/A	Synthetic
Chloroethane	N/A	N/A	Synthetic
Chloroform	N/A	N/A	Synthetic
Chloromethane	N/A	N/A	Synthetic
2-chlorotoluene	N/A	N/A	Synthetic
4-chlorotoluene	N/A	N/A	Synthetic
Dibromochloromethane	N/A	N/A	Synthetic
1,2-dibromo-3-chloropropane	N/A	N/A	Synthetic
⁽¹⁾ Maximum Contaminant Level ⁽²⁾ Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water ⁽³⁾ Action Level ⁽⁴⁾ Secondary Maximum Contaminant Level ⁽⁵⁾ Lifetime Health Advisory			

Requested by Ross Elliott - DNREC TMB

Substance	Standard (mg/L, unless otherwise indicated)	Standard Classification	Substance Origin
Unregulated Contaminants (con't)			
1,2-dibromoethane	N/A	N/A	Synthetic
Dibromomethane	N/A	N/A	Synthetic
1,3-dichlorobenzene	N/A	N/A	Synthetic
Dichlorodifluoromethane	N/A	N/A	Synthetic
1,1-dichloroethane	N/A	N/A	Synthetic
1,2-dichloropropane	N/A	N/A	Synthetic
2,2-dichloropropane	N/A	N/A	Synthetic
1,1-dichloropropene	N/A	N/A	Synthetic
Cis-1,3-dichloropropene	N/A	N/A	Synthetic
Trans-1,3dichloropropene	N/A	N/A	Synthetic
Hexachlorobutadiene	N/A	N/A	Synthetic
Isopropylbenzene	N/A	N/A	Synthetic
4-isopropyltoluene	N/A	N/A	Synthetic
Naphthalene	N/A	N/A	Synthetic
Perfluorooctanoic Acid / Perfluorooctane Sulfonate (individual or combined)	70 ng/L	LHA ⁽⁴⁾	Synthetic
Propylbenzene	N/A	N/A	Synthetic
1,1,1,2-tetrachloroethane	N/A	N/A	Synthetic
1,1,2,2-tetrachloroethane	N/A	N/A	Synthetic
1,2,3-trichlorobenzene	N/A	N/A	Synthetic
Trichloropropane	N/A	N/A	Synthetic
1,2,4-trimethylbenzene	N/A	N/A	Synthetic
1,3,5-trimethylbenzene	N/A	N/A	Synthetic
o-xylene	N/A	N/A	Synthetic
m-xylene	N/A	N/A	Synthetic
p-xylene	N/A	N/A	Synthetic
Pesticides, PCBs and Other Organics			
Alachlor	0.002	MCL ⁽¹⁾	Synthetic
Aldicarb	0.003	MCL ⁽¹⁾	Synthetic
Aldicarb Sulfone	0.003	MCL ⁽¹⁾	Synthetic
Aldicarb Sulfoxide	0.003	MCL ⁽¹⁾	Synthetic
Atrazine	0.003	MCL ⁽¹⁾	Synthetic
Benzo(a)pyrene	0.0002	MCL ⁽¹⁾	Synthetic
Carbofuran	0.04	MCL ⁽¹⁾	Synthetic
Chlorodane	0.002	MCL ⁽¹⁾	Synthetic
Dalapon	0.2	MCL ⁽¹⁾	Synthetic
Di(2-ethylhexyl) adipate	0.4	MCL ⁽¹⁾	Synthetic
Di(2-ethylhexyl)phthalate	0.006	MCL ⁽¹⁾	Synthetic
Dibromochloropropane	0.0002	MCL ⁽¹⁾	Synthetic
Dinoseb	0.007	MCL ⁽¹⁾	Synthetic
Diquat	0.02	MCL ⁽¹⁾	Synthetic
2,4-D	0.07	MCL ⁽¹⁾	Synthetic
⁽¹⁾ Maximum Contaminant Level ⁽²⁾ Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water ⁽³⁾ Action Level ⁽⁴⁾ Secondary Maximum Contaminant Level ⁽⁵⁾ Lifetime Health Advisory			

Other EPA 537 method compounds?

Substance	Standard (mg/L, unless otherwise indicated)	Standard Classification	Substance Origin
Pesticides, PCBs and Other Organics			
Endothall	0.1	MCL ⁽¹⁾	Synthetic
Endrin	0.002	MCL ⁽¹⁾	Synthetic
Ethylene dibromide (EDB)	0.00005	MCL ⁽¹⁾	Synthetic
Glyphosate	0.7	MCL ⁽¹⁾	Synthetic
Heptachlor	0.0004	MCL ⁽¹⁾	Synthetic
Hepachlor epoxide	0.0002	MCL ⁽¹⁾	Synthetic
Hexachlorobenzene	0.001	MCL ⁽¹⁾	Synthetic
Hexachlorocyclopentadiene	0.05	MCL ⁽¹⁾	Synthetic
Lindane	0.0002	MCL ⁽¹⁾	Synthetic
Methoxychlor	0.04	MCL ⁽¹⁾	Synthetic
Oxamyl (Vydate)	0.2	MCL ⁽¹⁾	Synthetic
Pentachlorophenol	0.001	MCL ⁽¹⁾	Synthetic
Picloram	0.5	MCL ⁽¹⁾	Synthetic
Polychlorinated biphenyls (PCBs)	0.0005	MCL ⁽¹⁾	Synthetic
Simazine	0.004	MCL ⁽¹⁾	Synthetic
2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	MCL ⁽¹⁾	Synthetic
Toxaphene	0.003	MCL ⁽¹⁾	Synthetic
2,4,5-TP (Silvex)	0.05	MCL ⁽¹⁾	Synthetic
<i>Carbaryl</i>	<i>N/A</i>	<i>N/A</i>	<i>Synthetic</i>
<i>Chlorothalonil</i>	<i>N/A</i>	<i>N/A</i>	<i>Synthetic</i>
<i>Dicamba</i>	<i>N/A</i>	<i>N/A</i>	<i>Synthetic</i>
<i>Metolachlor</i>	<i>N/A</i>	<i>N/A</i>	<i>Synthetic</i>
⁽¹⁾ Maximum Contaminant Level ⁽²⁾ Substance regulated by the Delaware Division of Public Health in the State of Delaware Regulations Governing Public Drinking Water ⁽³⁾ Action Level ⁽⁴⁾ Secondary Maximum Contaminant Level ⁽⁵⁾ Lifetime Health Advisory			

Added at request of Laura Mensch - DDA