STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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IN RE: HUMAN HEALTH CRITERIA WORKGROUP

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BEFORE: LAURA COOPER, Chair
CHARLES "LARRY" HARRIS, Member
JENNIE HENTHORN, Member
SCOTT MANDIROLA, Member
REBECCA MCPHAIL, Member
AUTUMN CROWE, Member
ANGIE ROSSER, Member
CHRIS SMITH, Member
ROSS BRITTAIN, Member
Harold Ward, Member

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Reporter: Bailey Kane

I N D E X

E X H I B I T S

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P R O C E E D I N G S

CHAIR: I want to get started with just --- let's just go right to worker goals because I know that's like the thing that we really need to resolve before we can ever move on with our lives.

And we've had a lot of e-mails around and at the last meeting we talked about and then I kind of cut off and ended and, you know --- oh, I wanted to show you guys something first of all. This is my --- my mantra for this year. I just --- probably everybody everybody's already knew about this --- this quote, but this is my --- this is my first --- first year of really living by this. Ever tried. Ever failed. No matter. Try again. Fail again. Fail better. And that's what I'm doing all the time now.

So I'm very excited about knowing that that is just --- you know, when you don't fail at something it's because you're not trying. And if I had a failure last month during our meeting then so be it. We move on. We do better.

So I wanted to start today with just --- let's look at the goals that Larry sent to us yesterday evening, which are really close to the goals that he sent

to us earlier to this month. I think they're just kind of moved around a little bit.

MR. HARRIS: Yeah.

CHAIR: And let's see if we can just come to an agreement on what goals we should have moving forward. And finally we'll have that and be ready to go.

Do you guys see this work document now? I see like a green line but I'm not sure.

MR. HARRIS: Okay. Got it.

CHAIR: All right.

This is --- this is what Larry sent us yesterday. And I just wanted to start from here and just get full consensus on these goals before we move on.

Does that sound all right to everybody? Okay.

MR. BRITTAIN: Good with me.

CHAIR: And I don't --- I don't mean do the goals sound good to everybody. I just mean the concept of let's starting --- let's start here.

So Larry --- Larry and Angie I believe, you guys --- well, you --- I think you worked together on coming up with this language when you sent it out earlier this month, and it's very similar to what was sent out earlier this month.

Well, worker goals that I had on our --- that I have on our presentation slide that was just what we --- I was just going to throw that up there and it was again just going to be a starting point. But it doesn't matter where we start from because we'll end up with something that we all agree on, so we can work with ease.

And Larry, can you just take a moment and try --- and kind of just go over these with us and how --- how you feel like they would be the best set of goals for us to have?

MR. SMITH: Yeah.

MR. HARRIS: Can you ---?

MR. SMITH: And one second, Laura. I'm sorry.

Are you recording this? I don't see where it says recording at the top of the screen.

CHAIR: Thank you, Chris.

MR. SMITH: You're welcome. Sorry to interrupt there.

MR. HARRIS: That's okay.

Can you hear me now?

CHAIR: Yeah, we can hear you. I paused the recording when I started just for small talk and --- and ---.

MR. HARRIS: Well, you know it's --- in some ways it's a little late in the game for us to still be working on our goals. But they're really --- the way I --- I actually did the ones you just put up here. And I looked on the one you sent most recently with the PDF PowerPoint you just sent out and I thought well, what have we done? I mean, I think the goals should be action oriented so I --- to learn, to reach consensus, to submit our --- our action comments, and then what did we learn?

Well, we learned about water quality standards. We learned about how science is used to determine those standards. We spent a lot of time doing that. We've already done that. And we learned about the recent changes made by the EPA. Maybe there's a better way to word that, but I think we get it. And then our goal to reach consensus was what you had on the bottom of your --- your last slide, Laura.

CHAIR: Yes. Yeah.

MR. HARRIS: And it's exactly what we're looking for. And then the thing that was missing is oh, then we have to --- our goal is to submit those changes to the EPA and to the legislature. So that's how I --- I thought these better described what we've done. And the wording, you know, I'm willing to accept any kind of

changes that people want to make, I --- or any changes to this too. It's just a point that it's sort of descriptive of what we done.

CHAIR: Right.

And I'm also fine with any changes that we make or whatever we come up with. Just that I'm --- I'm focused that we all just be able to --- I just wanted us to be able to talk about this together today. So we're all here to get this set and --- and move --- move on.

My only --- my question about this is the to submit, the Workgroup is really submitting to the Secretary for the Secretary's perusal what we feel would be the next bit of Human Health Criteria that should be purposed to the legislature. We won't be submitting to the legislature or to EPA. We as the Workgroup will submit it back to DEP Secretary. So I think we might need to reword that.

MR. HARRIS: Yeah. That's --- sure. However you think that's the right way to word it is the way it should be done.

MR. MANDIROLA: We could say to recommend to the Secretary the above standards for approval by EPA and legislature or something like that.

CHAIR: Will that make sense, Larry, for

it just to say to recommend?

MR. HARRIS: Yeah. Yeah.

CHAIR: And then ---.

MR. HARRIS: That's what we're supposed to do.

CHAIR: Yeah.

MR. MANDIROLA: Because that's what we're basically going to be doing. We're going to be recommending it to the DEP Secretary and then from there it will go forward, you know, hopefully legislature and the Secretary --- and the EPA.

MR. HARRIS: Yeah.

CHAIR: So we --- we recommend back to the Secretary so we'll need to change the --- some of the words down on this bottom line too I think to --- to make that clear, like to recommend the above standards for consideration by the DEP Secretary. Does --- I mean, something like that? Who else has thoughts on how we should ---?

MR. HARRIS: I thought how we established it looked perfectly actually.

MR. MANDIROLA: If you leave everything on the bottom okay and just said to recommend --- make the to recommend to the Secretary the above standards for

approval by EPA and legislature. So we'll be recommending it to the Secretary based on what we believe should be approved by EPA and legislature, but the Secretary is going to make the final decision on --- on what's submitted. And obviously we're a governor level agency so, you know, a cabinet level agency we --- we need to get approval to do all of that.

Does that make sense?

MR. HARRIS: It sure does to me, anyway.

MR. MANDIROLA: Are folks okay with that? Do folks have other tweaks they think are necessary?

I just think it's important we get over this hump. We had kind of --- I won't say a blowup, but we had, you know, some issues at the end of the last meeting which sparked some e-mail traffic which, you know, I --- I don't think was very productive. I understand the reasoning behind it because the goals changed a little bit and the whole group didn't know about it. I think it's important that we at this point kind of come to some consensus on this so that we can move forward with more of the science that we're --- that we've been talking about in the past couple meetings and we get this behind us.

So does anybody have any other suggested

changes?

SPEAKER: Scott, I think it looks good.

MR. MANDIROLA: Thank you.

SPEAKER: Awesome.

MR. MANDIROLA: Thank Larry.

SPEAKER: And Larry.

MR. HARRIS: All I did was move stuff around.

CHAIR: All right. If we're ---.

MR. MANDIROLA: Angie, how about you?

MS. ROSSER: I just gave a thumbs up.

MR. MANDIROLA: Okay. Sorry.

MS. ROSSER: Thank you.

MR. MANDIROLA: Yeah. I can't see everybody on the screen. I can only see five people at a time.

MS. ROSSER: Thank you.

CHAIR: All right.

Well, that part of it was much faster and quicker than --- than I would have expected. So if we're cool with these we're going to put them in stone and going to send them to the stone --- the stone mason later today and he's going to start chipping away and then that will be that.

MR. MANDIROLA: Lock them down. Send them out in an e-mail to everybody has them on this date.

CHAIR: Yep. I'm going to --- I'm saving it I think. Yeah. Okay. It's saved. I'm going to stop that share so you guys can all see everybody again.

MR. HARRIS: Look how nice this consensus stuff is.

CHAIR: Yeah. And it turns out its really easy.

MR. HARRIS: Okay.

CHAIR: Who knew that?

MR. HARRIS: Yeah. I --- I was hopeful.

CHAIR: Okay.

So past the goals I also wanted to talk somewhat about the questions that Larry asked when he sent us an e-mail in early January, the New Year's --- New Year's Day kind of e-mail. He asked a few questions and that kind of gets at what --- you know, how we're just talking about how we're moving forward, what we're doing next.

Did you have --- does anybody have something they wanted to add right there? Okay.

MR. HARRIS: Yeah. To be clear Angie was --- offered those questions.

CHAIR: Okay. Great.

So Angie and Larry. Yes, and you did say that in the --- in the e-mail that you guys came up with those questions together.

And so the first one how we'd be spending our time in the remaining meetings, and I think that's an excellent question, obviously. And the way that we're really going to focus in our time now is looking at --- we have 36 criteria that are in the Water Quality Standards Rule, have always been there and they are not --- and they're the ones that we didn't already propose revisions to. So those are the ones we're focusing in on. Hold on. There's like a street sweeper going by.

Okay.

So those 36 criteria we're --- we're going to look at in whatever reasonable chunks that we --- that we feel are the best to --- to look at in the remaining meetings. Of those we've already looked at the carcinogenic PAHs. That's what we did last month. Which are the ones that are all related to benzo(a)pyrene.

There is another group of PAHs. And we're going to look at those in --- later on in this meeting. But in general I wanted to make sure --- and if you looked at the slides you can see that I just have five

--- four blank slides out there for February, March, April and May meetings. We're just going to figure that out today what we're going to exactly talk about in those meetings.

So does anybody have any comments on that, like how --- how we're going to spend that time and how we're going to later on in this meeting plan --- plan that out, just in general?

MS. ROSSER: Laura, this is Angie. The first general response I have to that is looking back at our goals of reviewing EPA's updates, there are 94 of those, and --- and we're of the mind that we should be reviewing all 94 not just the 36.

MR. MANDIROLA: Okay. Let me comment on that.

I understand we want to go and look ideally at 94 and --- and I understand that you also brought up the comment about relooking at the priority pollutants. Not all of those are involved in this Human Health Criteria. And I understand that, and I'm not necessarily opposed to taking a look at that once we get done with what we originally set out to do here. I mean, we were proposing 52 to start with and the language that's currently in the rule, not the proposed, talks

about reviewing the --- the Human Health Criteria in Sections 8.5 and 8.6 or 8.3 or 8.4.

So I think it's prudent that we first focus on the group. We've done 24 out of the 56. I think we need to focus on the remainder of those first. And, you know, I --- I think everybody would agree we're going to have limited time with the next five --- four meetings. So maybe we'll get beyond these. Maybe we'll get through these relatively quickly and we'll be able to move on and --- and take up some more. But initially I think we need to focus on the 34 that are in --- currently in the rule on those pages or in those sections.

Does that make sense? I know you may not --- you may want to go further, but I think we need to try to accomplish what we've set out to accomplish before we start taking on ---.

MS. ROSSER: I'd be okay with sequencing that way. I think --- I think we do have time. I hope we will. I mean, that's what --- what --- and the way we might sequence it further is to take a look at the overlay with the --- the priority pollutants. That might be a good place start or --- or what we know to be in use in West Virginia.

MR. MANDIROLA: Like I'm --- I'm not necessarily opposed to taking a look at the path forward after we finish the 34, but I think we got to focus on those first because that's been --- that was our commitment to legislature, was to look at the updates in --- in those two sections, and I'm looking for those sections --- the sections right now. I don't know that it really matters that much, but --- I'm trying to look at the word, the exact wording so we know.

But is that --- you know, everybody okay with that? I mean, I think that's important that we --- we know what we're focusing on initially before we expand it to the point where it's ---.

CHAIR: I --- I agree.

MR. MANDIROLA: --- it may be too cumbersome.

CHAIR: I believe we need to start with the remaining 36 and if we can get past that that would be --- you know, that would be great. But I feel like --- and it does say specifically in section 8.6 in the --- the language that we put --- that we proposed there ---.

MR. MANDIROLA: Yeah, 8.23 and --- the updates --- the way it's currently written is the

Secretary shall propose updates to the numeric Human Health Criteria found in appendix E subsection 8.23, organics and section 8.25, phenolic materials.

So our --- our initial charge here is to look at those updates for what's currently in our rule. So I think, you know, our plan --- our immediate plan needs to focus on those. That's my two cents.

CHAIR: Yeah. I --- I agree.

What does everybody else think? Jennie, I see you ---.

MS. HENTHORN: Yeah. I agree with Scott. And to the extent we have --- have to do more than let's --- let's go after it then.

MR. HARRIS: We have to start somewhere so why not start ---?

CHAIR: Right. Okay.

And as far as how we'll look at those in our remaining meetings, again, we can --- we can talk about that later in this meeting. But --- and I think it'll be better to have that discussion after we go through what we have to go through in this meeting so that we'll have a better idea of what kinds of things to --- we're going to --- to want to look at for --- for those chemicals for the remaining meetings.

So another question that Larry asked was how will we reach consensus on a set of science-based water quality standards. And I --- I think that it's important that we --- and I think --- and Ed brought up when --- when I was speaking to him last week, you know, that consensus is really --- it's a word that we kind of misunderstand to be --- to mean that everybody is completely on --- onboard, I mean, everybody's completely in the same thinking.

We're never all going to be in the same way of thinking. We know that's not going to happen. But what we can do is work together to come up with a consensus of what we can all agree on to propose back to the Secretary. And I think we're going to have to spend a portion of the May --- May meeting, the final meeting, coming up with what exactly is --- narrowing it into that and coming up with that consensus for that --- for that general agreement, or what everybody can live with.

And Scott's mentioned this too, and I've talked to him recently, that he does a lot of work with the Chesapeake Bay Group, which is a lot of states that have very --- hugely varying opinions on how things should work. And then the way they make decisions is --- you know, it's what can you live with. And, you know, if

a state absolutely can't live with something they'll raise their hand on that, but that doesn't mean that they're for sure, you know, completely 100 percent happy with whatever is decided. It's just, you know, they know that they have to --- they have to come together in some way. So hopefully we'll be able to do that. And that's what ---.

MR. MANDIROLA: And it was --- can --- can I add something real quick?

CHAIR: Please do.

MR. MANDIROLA: You know, Larry made a good point at the last meeting that consensus isn't everybody holding hands and agreeing on everything. The Chesapeake Bay Group that deal with is a great example of that as Laura said. You --- you got eight jurisdictions with vastly different approaches.

You got headwater states and bay proper states and what the bay proper states the headwater states don't care about what the --- what --- you know. Bay proper states make a huge amount of revenue from the bay. The headwater states make virtually nothing.

So when things come up we typically take the approach --- quite often there's things that are moving forwarding that West Virginia doesn't necessarily

wholeheartedly agree with, but in some way there's concessions that we can live with it so we will move forward with consensus.

Okay?

We're not going to stand in the way of consensus. We won't vote and say we agree wit this provision, but what we say is we're not going to stand in the way of consensus.

Then other times, like New York typically will --- they will oppose. They say we can't live with that. And if a jurisdiction can't live with it that's kind of the threshold, is we just can't live with it. And at that point, you know, concession, it kind of falls apart.

Okay?

Consensus falls apart at that point. So what we need to keep in mind is we may not agree on everything. The end numbers we may not agree to, but if we can agree on the majority of the science and the approaches and use of updated numbers that EPA has come out with since the 2015 --- you know, updated either fish consumption rates or IRIS numbers or whatever it might be, those are the kind of decisions --- we need to figure out what we can come to consensus and move forward as

best we can on those.

You know, it was brought up in the last meeting should we talk about --- should we --- should we do voting. Well, I don't view this group voting on it as being worth much because if you're the --- if you're the faction that gets outvoted you're going to disagree still and you're going to do what you're going to do. So voting on it and saying well, the group voted on it and the majority said we should do this, it doesn't help the majority stop fighting their cause.

So --- and it's really not fair for --- from --- from my perspective, for us to put either the environmental community in that situation or the --- industrial groups in that situation because, you know, the --- both of you represent different groups of people that you --- you're not going to be able to go against on certain issues. So for us to sit here and vote and say oh well, we voted on it, it really doesn't make that much sense. We need to work towards what we ---.

CHAIR: And also this --- this group wasn't designed --- the group wasn't --- wasn't put together with the idea for voting because if it was we wouldn't have all of these DEP people here. You know, like Kerry and Chris are both in this group, you know,

and --- and they both work for me so ---.

MR. MANDIROLA: I mean, that's my two cents on consensus. I think it's important we go into it with the understanding that, you know, not everybody is going to be thrilled with everything all the time, but we need to look at what we can live with. And that's --- I've talked way too much already this morning.

MR. HARRIS: No. You said it right and so did Laura. Voting is not the way to go on consensus. The one thing I would add to what you said is that if you can't live with something during a discussion, let's say next month, why do we have to wait a whole month to start talking about it? You --- you meet with the people who aren't agreeing between meetings and work it out until you can come back and say okay, we think we can live with this --- this now. I --- anyway, that's ---.

MR. MANDIROLA: No, I think that's a --- that's a great --- that's a great point. That is an absolutely great point. And --- and it follows right along with the way it works when we're dealing with Chesapeake Bay. When --- when --- PSC meetings we have principal staff committee meetings and if there's not consensus in previous meetings the chair will usually work with all these different groups in between meetings

to try to get to an area where we think we can.

It may not be a hundred percent of where we started from, but at least it's --- we can move down the path a little bit and we can agree on that much of it. That it we can keep that going, the momentum going between meetings with, you know, phone calls and try to explain and discuss to get other people on board I'm all for it. That's --- that's what we need to do to try to keep thing moving.

We're on a limited timeframe. We know that. But, you know, I think it's important that we get as far as we can with the group we got. It's a good representative group I think.

CHAIR: And I --- I --- I want to use ---.

MR. MANDIROLA: I'm learning. I've been in standard since 2006 and when I sit here and listen to Ross on some of these things I'm learning a lot of stuff that I kind of knew in the back of my head but never really understood. So, you know, I think it's been successful so far in the fact that everybody's been learning a lot.

CHAIR: And I --- I think I want to --- I want to use this moment to be like --- it's like there's

a lot of --- there's a lot of things that I --- I work on in --- in my own personal life to --- to get better, and I know that if something is easy is really worth much, you know? I mean, things like this, I mean, this is one of the big things that, you know, that I --- that I super value what's going on in --- for me right now, is that we have this group and we're having these discussions.

And I think maybe part of what Larry is saying is not --- not even just between the meetings but during the meetings. We need to have --- you know bring up whatever issues you're having. We need to bring those out in these meetings and that's what we're here for.

And I just think that this forum is so valuable that we --- we're all pursuing this very hard topic together and --- and that it just --- it just means a lot to me that we're here, that we're having these talks every month. And I know that they're hard and sometimes they end up with a lot of frustration, but that frustration, even tough it doesn't feel like it is progress. I mean, that's what progress is, that you had frustration and you keep moving forward. I mean, otherwise it's not --- you're not doing anything very --- very hard.

So I --- I thank you all for being here

every month. I don't know that anybody has even missed one of these. It's been really great so far.

MR. WARD: Laura, this is Harold, if you don't mind? I hope everyone can hear okay. I'm having a few technical difficulties, but I --- I have to exit the meeting. I've got some prior commitment. But I just wanted to take the opportunity to let this group know how much I appreciate their time, their dedication to this.

As Laura said the opposing views. You know to reach --- to reach the goal of developing standards that are in the best interest of --- of West Virginia as a whole it takes dissenting views, it takes debate and it takes collaboration and compromise. And I --- and I just appreciate the group of individuals. This is a step forward in something that I've envisioned for the Agency for a long time. And we --- we do it so well day-to-day in our normal routine course of business.

But what this group has --- has undertaken is something significant and, you know, we really have not seen this type of involvement that I'm aware of with the Advisory Council. And in my mind as I read the statutes and the defining guidelines, this is exactly what this group should be doing. And as an agency we appreciate it, we embrace it and we want more of it going

forward. The more we communicate --- Larry said one thing that I thought was real critical. And, you know, the --- the fact that we're in this group and have the Workgroup and what comes out is a --- you know, is a proposal by this Workgroup but, you know, everyone on this Workgroup I --- I have no anticipation and would be disappointed in fact if anyone felt that they were forced to, you know, concede on their core values. Your core values that bring you --- the values that you represent that's what brings you to this Workgroup.

I've never been one to struggle with having to make decisions. But I --- I always want to listen to those who are informed and listen to everybody's input as I read those decisions. And that's --- that is what I hope we can foster with this Workgroup, that we'll go on and just make DEP a better organization down the road. But this is a very critical task that is put before you all and I appreciate your time and your dedication to it. And I --- I just wanted to address the group briefly and I apologize that I don't have a lot of time.

But just to let you know how valued your input is on this group, and everything I've heard this morning, I mean, getting past the goal obstacle, it

seemed like the simplest thing and it's turned into quite a debacle. I'm so glad that you all have reached a consensus on that to move forward. And really, I won't take up more of your time. I know you've got a lot of work to do here.

But as you dealt with --- and the science, that's an important thing that needs to come out of this. Yeah, we --- we need --- we need scientifically based information to put in for consideration for our proposal to the legislature.

And I like what --- how the goals have been modified. I think it's a very much more --- it's a more straightforward approach. And I --- you know, and the fact that they do --- do offer a path, without consideration of some of the undercurrents that --- that we all know we face down the road as we get to the legislature.

But you know, the fact of what comes from DEP that's what important to me. That it is --- you know we're --- we've got science-based standards to recommend that are protective for the water quality of West Virginia and --- and our citizens. I mean, that's inherently the standards are protective of citizens.

But I just --- I just wanted to really

take time to thank you and let you know how much I appreciate and --- you know, what you're doing here and how this can really --- can really lay the foundation for some very positive moves in the future in regard to the Agency's response and --- and working in conjunction with --- with groups that represent the interest of the people. So thank you very much and unless anybody has any questions, I'd be glad to answer any briefly, but I don't want to interrupt your alls workflow. So I'll end with that.

MR. MANDIROLA: Thank you, sir.

CHAIR: Thanks, Harold.

MR. WARD: Thank you all very much, and I --- I have to end now, but have --- have a good day and I really appreciate everyone's efforts.

CHAIR: Thank you.

MR. MANDIROLA: Thanks.

CHAIR: All right.

There were two more questions that Larry posed that --- in that --- in that e-mail. One was how will we be facilitated in coming to our decision. And I think we've kind of gone over this, but I don't know that we're --- that our facilitation is going to change in any way. We're basically going to speak together, work

together, have conversations to come to our --- our consensus or our agreement or what we can live with at the end.

Does anybody have any feedback on that? And I don't know if you can --- if you wanted to clarify, Larry, what you were kind of going for there maybe that help too.

MR. HARRIS: Well, I know --- Angie I think was the one that came up with the idea, but we've talked about it now. We're going to talk about things at the meeting and if things can't be resolved perhaps in between meetings. So that's the kind of facilitation I think that we need.

Does that catch it, Angie?

MS. ROSSER: Yeah. Just that we have some --- that through our Chair here or someone else that --- who is well versed consensus building is facilitating as to what is that. I mean, there's --- there's a method to this that we've been talking about.

CHAIR: Do you think that we will be facilitating that facilitation as we move forward like with --- with the way that we've --- we've been working the last couple of weeks, and the way that we're talking about it in this meeting?

MS. ROSSER: Yeah. I mean, I'm --- I'm hearing a change. I mean, I --- I would just clarify I completely support the consensus model for this group. I --- I think I was the one who barked out are we voting because I thought we were working under consensus and when I saw the goals changed and I thought we had consensus around the goals and when I saw them changed it --- that was just like what happened to consensus? So here --- here we are. I think --- I think we have a better common understanding. At least I feel like we do.

CHAIR: Great. Excellent. Okay.

So the final question that was in that e-mail was how will the meeting agendas be structured? And I think that you had spoken to this in some of that back and forth, Angie, about the agendas. You know, they come out. I --- I would send out an agenda a couple of days beforehand and say here's the agenda and I'll see you in two days. Maybe that's not the best way to do it. And that's kind of why I'm hoping that as we --- as we --- towards the end of this meeting set out what we plan to do for the coming meetings. We'll generally have an agenda for not only February, but a pretty general agenda for the --- the final meetings too by the end of this one.

So I was hoping that we --- we'll do that together. And so I won't be like it's just thrown at you, like here's what we're doing, and you don't have any time to get back and --- and make a change to that if --- if you wanted to.

MS. ROSSER: Yeah. I would just say --- yeah --- on the agenda --- it's a good idea. We had --- we had some understanding of the things that we had agreed to be on the December agenda that weren't. So I think that's why I had that question of just ---

CHAIR: Right.

MS. ROSSER: --- define how --- how would we --- be setting the path forward and ---.

CHAIR: Yeah. And I think that was really to the priority pollutants.

MS. ROSSER: Yes.

CHAIR: And I had said at the November meeting, yeah, we can --- we can talk about that. I can look at --- more into that. And as I planned the December meeting --- well, we were going to have a --- a large presentation already, but for the most part it was that it was beyond the scope of what we needed to focus on next, you know.

Like Scott was saying earlier the priority

pollutants are --- are beyond the --- what we have in the rule now, and it's not necessarily what we laid out as a plan for what we were going to --- I didn't want to get way down the rabbit hole of that before we really got everything else accomplished.

And I should have made that more clear in our November meeting. I should have just said, you know, I don't think we can do that next month because we need to do this. But I have a tendency to overpromise and want to be able to do things that I don't --- I don't have time or the scope to do at that point.

MS. ROSSER: Yeah.

CHAIR: But if we can ---.

MS. ROSSER: And then I think, you know, the move was like well, we'll talk about PAHs next, and maybe that's a really good idea but like to talk about why we're going to PAHs next and just get consensus around that. I mean, we have --- you know, I'm --- I have some general thoughts about these next four meetings.

Does it sound --- do you want to hold that to the end, Laura? Is that what you were --- you were saying?

CHAIR: I think so. I wanted to spend as

much time having this conversation as we needed to. And we will --- and then whatever --- you know we will do what --- we'll go through the rest of this, the things we have for this meeting, but if we wanted to go into that now that's fine. Whatever --- we can go into more detail about the --- about that now.

But what was --- what was ---?

MS. ROSSER: Well, maybe I can just share our --- our --- kind of our general philosophy ---

CHAIR: Yeah.

MS. ROSSER: --- on moving forward. That might set the stage or get people thinking about their --- their responses to this. I mean, where --- where we are --- where are now as we were in 2019 is that we support EPA's methodology that they're --- they have recommended the criteria.

And I --- I'm concerned if we would go down the road of starting to go parameter by parameter of --- of recommended criteria that comes out of EPA that we're setting a precedent --- a new kind of precedent that I haven't seen the EPA take before.

As we heard from EPA there's a whole team of scientists who had worked on these recommended criteria for years and years. They have the budgets to do

it. We don't.

So I'm just kind --- I mean, at some point like we've got to trust in these career scientists and I don't know that IUPAC is place to cite that each and every compound, like everything. Like I'm --- I'm thinking ahead to what we might be dealing with hopefully the not too distant future, which is coming from EPA in terms of recommended criteria for PFAST compounds.

CHAIR: Uh-huh (yes).

MS. ROSSER: I mean, that's maybe 20, 40. I don't know how many.

CHAIR: Right. And they're certainly working on that.

MS. ROSSER: Is this representing --- is this representing an expectation that we're going to go one by one by one through those and it'll take us six years like it has in the process to come to where we are? I mean, it's just --- if there were 2016, if there were five years ago and we were looking at this and that and this way now I might feel a little differently, but the fact that it's taken us --- it's six years later and we still don't have any updates to our Human Health Criteria. I --- I worry about just like we're --- we're going too far with this and it'll just result in

unnecessary delays and I don't know. This might be a bad --- this might be a bad comparison but it's on my mind, the vaccine, because like at some point you just got to trust what's going in your arm.

CHAIR: Oh, yeah.

MS. ROSSER: You know the scientist behind it and that's what EPA's role in this is. So that's our general concern with trying to dissect this too far. And --- and knowing that EPA, you know, previous to 2015 did a --- they did a whole public comment period. They had a vetting process leading up to this. So this has been --- this has been going on for --- for many years, and I just feel like we're in 2021 and we're still working on it and I don't want to set that kind of precedent.

CHAIR: Right. Do we have any feedback? I see Jennie's unmuted.

MS. HENTHORN: I do. I think that that's actually why we're here. I think that we're not questioning the EPA methodology but we are questioning the numbers that are in each of the slots and the calculation. So that's --- that's honestly what I thought we were going to do. If we're going to do that I'm not quire sure why we're here.

MS. MCPHAIL: Yeah. I --- I share those

concerns as well but --- but also want to be kind of fair to everybody on the call in Zoom is that, you know, yeah, it's been six years since the EPA brought these up, but really it wasn't something that cycled into our process until 2018. So I --- I don't want to --- I don't want to misrepresent the fact that we just, you know, seemingly ignored it since 2015. I --- I don't know that that's a fair assessment either. So just sort of throwing that out there.

CHAIR: They're absolutely not ---.

MS. ROSSER: I didn't say it was ignored. I didn't say it was ignored. I said it takes six years to get here. And I just --- and yeah, we --- EPA started public meetings about this in 2017. We had many discussions around this and we ---.

MS. HENTHORN: Well, you've all heard me say this. I mean, that's why I was to the ---.

CHAIR: We --- I --- I would ---.

MR. MANDIROLA: Keep one thing in mind everyone. Keep one thing in mind. I mean, the one thing we have seen just from some previous demonstrations, the information meetings that we've had, you know, we've looked more recent science updates that EPA has done on PAHs. We've looked at IRIS, that EPA has new numbers in

there that are different than the numbers used during the '15 update.

So I mean, I understand folks may not think we're moving as fast as we need to, and yeah, we got --- the feds have more money and they have more science but that doesn't necessarily mean their numbers are always correct. You know, it --- it is our responsibility if we've got the manpower and the will to do it to take a look and make sure it's the right numbers for West Virginia.

I mean, the more --- the proposals that are out there now in this rule are based on the National Fish Consumption Advisory. You know, my recommendation in the last rule was to go with West Virginia's because it was more West Virginia specific. You know, that --- that model has changed. That's fine. But we're working to try to make sure if we're going to pull something --- put something into our rule and make folks regulatorially responsible for it in permits that it's something that's fair, accurate, it's --- it's the number that needs to be out there, okay, in order to protect human.

So I mean, I understand they've got more juice but, you know, I've worked with EPA for a long time on --- on other standards that, you know, sometimes their

science doesn't always add up. I mean, I've been fighting with them on aluminum for ten years, and their science isn't good. I --- I --- and they may think it is but that's why I'm saying I --- I don't think it's just --- we got to be careful with all of the standards we adopt and we need to move forward.

And I --- and honestly I think the understanding that everyone's getting from this approach is very helpful. And, you know, I think we need to figure out how to move it forward and not dwell on where we are right now or that it's been six years. I just think we need to try to move it forward as best we can. That's my advice in order to keep --- I'd like to keep consensus --- the positive consensus for the goals moving forward and not backtrack it.

You know, one thing we talked about internally between meetings and had some folks do was do some --- and rather than going through one compound at a time we put groups together. What group of these 36 compounds is only affected by say the --- a change in the BAF? What group of compounds do we have in here that have new IRIS numbers that are consistent with what was put in in 2015?

That may be an approach for us to start

moving forward in taking a look at some of those and seeing where they land because we may be able to come to some consensus on, you know, accepting new IRIS numbers when we make our --- our recommendations. But that would be the approach I would suggest when we start moving forward, is somehow --- and there's a whole host of different ways to group these things. PAHs was one.

You know you can look at all the PAHs because all of them are affected relatively similar to the way that benzo(a)pyrene was and --- and Ross went through that very meticulously at one of the meetings. So you know, I don't think we need to necessarily go one compound at a time. I think we can look at the science and the groups of compounds that are potentially affected by them, and that would be my initial recommendation in moving forward.

Does anybody have anything on that?

CHAIR: Yeah. I wanted to say the same kind of thing about the groupings, that Chris has put a lot of work in the last couple of weeks so we can show you guys today all --- the different ways you can group the chemicals and we can talk about which ways we want to look at them. We also added ---.

MR. MANDIROLA: And Ross did a really good

job of adding in the ---

CHAIR: Yeah.

MR. MANDIROLA: --- the database information, which was great.

CHAIR: And we also marked them for which --- which parameters changed a lot and which of them changed a little because Angie had asked that we show them way too. So we're trying to show them in all the different ways so that we can really look at them in groups. Yeah, we don't want to get mired down in looking at one chemical at a time either because we could use up the rest of our --- our meetings real quick and never get to --- to all of these 36 with some parameters so ---.

MS. HENTHORN: And that was actually what I was kind of hoping we could do today is use this as an example for how we could possibly get groups of things off the table, resolved, because I think that a long of the cancer slope factors there's not a difference between the IRIS numbers and the West Virginia numbers that were used in the --- in the calculations.

And maybe --- maybe we can get beyond those. Maybe there are only a few of the cancer slope factors maybe for the PAHs or maybe a few other parameters that are need to talk about. That was

honestly what I kind of hoping to do today is let us have the experience of trying to move things off the table. Put them in the bin of we're done with that.

CHAIR: Well, we're definitely going to do that today, Jennie. We got time. We're moving onto that soon.

MS. HENTHORN: Yeah. But I do want to make sure that you have time to set your agenda for the last four meetings. But I do think it would be nice if we tried to do a little bit of that beforehand so we can see if that model works with the group.

CHAIR: Yeah. And I --- and I --- I put it in --- in that kind of an order in my --- my thoughts of how we would order this meeting so that we can get through that important stuff and then --- and have this important discussion, which we're having and I think we're --- we're almost there, and then move on to these agendas for the next meetings.

MS. HENTHORN: Yes.

CHAIR: Because if we don't make it to setting a --- a very specific agenda for the May meeting by the end of the January meeting I think we'll be okay. You know, so that was --- that was my thought there.

MS. ROSSER: Just one more comment I have

on --- on a precedent we might setting. I mean, if we're looking at using a more updated numbers than the 2015 criteria, you know, are we setting ourselves up to have to do this every year or every three years to look at what were the latest updates, you know? How long will they --- how long do they just there? Do you --- do you understand my question, Laura?

CHAIR: Yeah, I understand that. I don't know how we would approach that in the --- in the future, like if we will revisit the rule every time IRIS makes and update. But know the water quality standards rule is pretty much out there every freaking year anyway. So I don't know, you know, what --- what we would --- if we would continue on in that --- in that vein or not. But I --- and when we talked to EPA in October and since then in e-mails they were pretty clear that if an IRIS number has changed, you know, they would have obviously no problem with the State using those numbers in their calculations because that's --- that's their newest information. They don't have the resources to be completely revisiting criteria in large groups like they did in 2015 over and over again, but the IRIS numbers when they change that can always be revisited.

MS. ROSSER: Yeah. I mean, if we go this

way it just occurred to me that we might want to think about operationalizing or revisit an update that IRIS numbers change. It'd be nice if EPA did that for us.

CHAIR: Right. Well, we --- we do the --- we review the rule at least tri-annually and that's what's required by federal rule anyway. So it could definitely be something that we look at. It's not something we have done in the past, but you know we're looking at those now. There's no reason why we wouldn't again look to the IRIS database to see what's changed, you know, in the previous three years if we're revisiting a rule every --- the rule every three years. All right.

MS. ROSSER: Three --- three years would be better than 30 or 15 years.

CHAIR: Yes. Okay.

So if we have reached the end of this discussion, and I didn't plan for that to be exactly one hour, but it's pretty darn close, so we're halfway --- we've used half of our meeting and I think that is --- that's great. I just wanted this conversation to be kind of organic and go on. And I'm going to try not to inundate you guys with like big complicated slides anymore. I know that's been kind of --- you know, been just kind of talked a lot in these --- in all of the

meetings we've had thus far. And so moving forward we're going to do a lot less of that and that's why we haven't seen a slide yet. But I'm kind of looking at my slides as we go and the next thing is for us to get into looking at our spreadsheets --- spreadsheet, the one that Chris has been working on to kind of show you how we have grouped the chemicals or shown them in --- in a way that it would make it more easy to --- for them to --- for us to look at them. Do we want to move onto that now?

And Chris, do you have that spreadsheet open? I could let you run it if you want to --- if you want to show everybody what we've been working on.

MR. SMITH: I do, but the --- the version that I have open has Ross's comments in it as well.

Is that okay?

CHAIR: Yeah.

MR. SMITH: And there's a bit more information in those, so --- and I think some of that we're not actually going to get into at this point.

CHAIR: Right.

MR. SMITH: Okay.

CHAIR: So I --- I set it so that you can share your screen. If you select share screen and then pick which window you want to share it should popup for

all of us.

MR. SMITH: Okay.

Do you see it?

CHAIR: Yes.

MR. SMITH: Okay. All right.

So in this first spreadsheet what I did is I grouped the remaining compounds together by what equation inputs have changed between the 2002 EPA calculation and the 2015. So these are pretty self-explanatory. You can see on the first one nothing has changed, but then again, you know, the --- the standards aren't that much different, the 2.1 to 1.5. For cyanide the only thing that changed was the reference dose but not the --- bioconcentration factor.

So then we have a larger group here where both the bioconcentration factor --- I'm sorry. This is the group where just the bioaccumulation factor changed. So reference doses and cancer slope factors have not changed any in this group. And you can also see that in the previous calculation EPA used bioconcentration factor whereas in the newer calculation they used bioaccumulation factors. So you can --- once again, not --- not to go through every one of these individually, but in the --- in this group this is just where

bioaccumulation factors have changed only.

So then in the next group shown here in pink, these are the compounds for which the cancer slope factor or reference dose, depending on whether it's a carcinogen or not, changed and also the bioconcentration factor, BAF, changed. So like I said I --- I don't think there's any need to go through each one of these line by line.

Does anybody have any questions about this kind of grouping? Okay.

I also grouped the compounds by compound --- I'm sorry, go ahead.

CHAIR: So in the Ross recommendations column he has marked asked whether we should adjust the bioaccumulation factor. That --- can you talk something about --- about that for a minute, Ross, about what you were speaking about there?

MR. BRITTAIN: Sure. Thanks, Laura.

So overall, you know, the first two categories I will say that, you know, that Chris put --- just had like the cyanide and the --- and the --- 2, 4, 6-trichlorophenol, you know, I think those can be readily accepted without any problem.

When you get down to where they change the

BCF, the BAF, this is one of those --- you know, because there's better data as I talked earlier, very early on when we first started meetings. There's very good data or better data on the bioconcentration factors and very little on the bioaccumulation factors. The bioaccumulation factor is a better number in terms of accounting for all the potential exposures, but there's just not good data on it.

So with the --- with the BAFs those have been primarily derived not through experimentation but just through modeling. And I noticed with the BAFs that we're generally using in the 2015 update, that most of them did not necessarily agree with the BAFs that are in standard use among risk assessors, toxicologists such as myself and --- and even necessarily among the EPA.

So if you look at those other two columns that I have over to the left of the blue column there's the --- CompTox is a relatively new data set from EPA. It's actually still in the process of being built online by the --- by EPA. This is the numbers that EPA recommends. And in the CompTox database it actually shows the --- the bioconcentration factors and the B --- and the --- that have been experimentally or model driven versus estimated, and it also has the bioaccumulation

factors for that.

And then I also double-checked the CompTox database against my other one that I go to from the Risk Assessment Information System, and what's interesting is the bioaccumulation factors between CompTox and the Risk --- Risk Assessment Information System were in agreement. They were looking --- they were using the same numbers. And I noticed that the BAFs from CompTox did not necessarily line up with the BAFs that EPA was using in 2015. Now, some of that could be because of new modeling going on for a lot of --- because this is --- like I said that's --- that's a work in progress. It's only been five years.

CHAIR: I just want to interject for a second. First, I'm not sure. I don't know whether EPA --- the water quality standards people at EPA would want us or would approve us using a different BAF ---

MR. BRITTAIN: Yeah.

CHAIR: --- and BCF. And the other thing is I'm noticing that like on line 13 there you can see it in column F there are three BAFs and that's ---

MR. BRITTAIN: Yes.

CHAIR: --- and that's for the different trophic levels. There is different trophic levels and

they either average those together or they --- they do whatever they need to do to --- to get --- to get the right one. But in column I we've got one number.

MR. BRITTAIN: Yes.

CHAIR: And it looks like they got like 18 --- 184,000 in that --- in the line that I'm looking at there for that. So they --- they arrived somewhere --- they --- they also arrived somewhere in the middle, but they --- it looks like they aren't using the three different trophic levels or if they do we don't --- we don't see that. There's ---.

MR. BRITTAIN: Yeah, exactly. And that --- and that's it. Is that I'd have to look into more details on how --- how they actually calculated or estimated those BAFs.

So that was where when I looked at the differences --- that's why --- that's why I put question marks at like, you know, which one would be appropriate. And --- you know, and I --- the --- to me the only ones that I would question is where the BAF from CompTox is like on different orders or magnitude from what they use. And like as long as we're in the same range I think it's okay to --- to accept what EPA was using in 2015.

But if you see significant differences in

terms of order or magnitude between the BAF, like --- like on line --- row 17 there. I can't --- I don't see which chemical that is.

CHAIR: Yeah. That's the one I'm looking at.

MR. BRITTAIN: It's 710 --- I'm sorry?

CHAIR: You --- that's --- I was looking at --- yeah, right around there too. I was actually looking at row 18. Is that the one you were talking about? Oh, you --- you did. You said 710. Okay.

MR. BRITTAIN: Yeah, 710. So --- yeah. So BEHP, that's what it is. So they got a 710 versus 1,040. Or if you look further down ---.

CHAIR: And even the very next line, the chlordane ---

MR. BRITTAIN: Yeah.

CHAIR: --- the BAFs are 5,000, 44,000 ---

MR. BRITTAIN: Yes.

CHAIR: --- and 60,000 for the trophic levels ---

MR. BRITTAIN: Compared to three million.

CHAIR: --- and CompTox says 300 --- yeah, three million.

MR. BRITTAIN: Yeah, three million.

Exactly. And --- and those are the ones that makes me question like what's going on with those differences on --- on those --- on those areas. And we --- and we may want to --- you know, I would definitely say these other ones just accept them as they are, but maybe look into the ones where they're, you know, within the same order or magnitude kind of thing. But if you see significant differences like that we may want to look --- do a little bit more digging just to make sure we're comfortable with the BAF. That'd be my only, you know, potential recommendation. But ---.

MS. HENTHORN: Ross, can you --- so sorry.

MR. BRITTAIN: Sorry.

MS. HENTHORN: Could you send us a link to where you're getting the CompTox numbers?

MR. BRITTAIN: I certainly will. And --- and it's freely available on the --- on the internet. So I'll send that out to everybody right away.

And then --- I'm trying to think if there's anything else. And when it comes down to the next group it's the same --- that's the only group in the pink that I think we may actually need to go chemical by chemical because there's just --- there's multiple things going on with --- within that, and so we may ---

particularly on the RFDs and the toxicity data. Those --- those are the ones we may need to discuss individually, go line by line.

But I think the rest of them we could pretty much as a --- you know, assign them as a group and --- and say that we're --- they're in good shape and we could approve them, assuming everybody else agrees with them.

CHAIR: So Ross, would you say that in the group that's yellow, the group where the BCFs and BAFs changed ---

MR. BRITTAIN: Uh-huh (yes).

CHAIR: --- would it make sense to remark the ones where you say adjust BAF and really just mark the ones that significantly change like chlordane?

MR. BRITTAIN: Yeah.

CHAIR: Maybe that one we need to think about whether we adjust the BAF.

MR. BRITTAIN: Yeah.

CHAIR: And maybe we could remark this column so that we're really only focusing in on those.

MR. BRITTAIN: Yeah. I think that would be a good --- a good way to --- and then the other --- and then the group that stays in the yellow as it is

right now we can --- I think we can probably just move on with, you know, say we're done with those, assuming ---

CHAIR: Right.

MR. BRITTAIN: --- everybody else is comfortable with that. And then we can look further into the BAFs for those other ones. And that could be something ---.

MS. CROWE: I don't have the --- the formula memorized, so can you explain how changing the reference dose or the bioaccumulation factor would affect the --- the criteria? Does that question make sense?

CHAIR: Yes, absolutely. I'm trying to bring up the --- the ---.

MR. MANDIROLA: And in this particular column or case of the yellow compounds the reference doses don't change.

MR. BRITTAIN: Correct.

MR. MANDIROLA: Is that correct?

MR. BRITTAIN: Correct.

MR. MANDIROLA: It's just ---.

MR. SMITH: Right. Right.

MR. MANDIROLA: It'd just be for the BCF or BAF changes.

MR. SMITH: Yes. That's correct.

MR. MANDIROLA: Okay. Just clarifying.

CHAIR: So --- so the way that the BAF changes the --- the outcome, Autumn, is the BAF is on the bottom of the equation, on the bottom of the faction, so it's in the denominator. So as the BAF gets larger you're just dividing the top, the numerator, by a larger number and therefore it is --- it becomes smaller.

MR. SMITH: Yes.

CHAIR: Right?

MR. BRITTAIN: So --- yeah. If you look at the example ---.

CHAIR: I don't need that from you, Ross.

MR. MANDIROLA: The basic approach, Ross, if I'm not mistaken is if --- if --- if the BAF increases you're basically --- the bioaccumulation factor is higher, it's --- it's been determined that it bioaccumulates at a higher rate therefore that's going to create a situation where you're standard is going need to be low.

MR. BRITTAIN: Yes. And --- and what you will generally notice is where the difference is, where the higher ones tend to be, it's on the pesticides.

MR. MANDIROLA: Okay.

MR. SMITH: Yeah. I just highlighted

Aldrin here as an example. You can see the original bioconcentration factor was 4,670, but then when the BAFs were established you got from 18,000 to 650,000 and you can see there's a decrease in the standard by two orders of magnitude. So it's two orders of magnitude lower than it was originally with this bioconcentration factor because these BAFs are so much higher than that.

CHAIR: Does everybody see that? That --- that's the --- that's the best way to say it. So you can see that the --- from the 2002 calculation and the 2015 calculation the difference is a couple of orders of magnitude and that was affected by --- because the BAF was much higher than the BCF was.

MR. SMITH: And as far as the reference dose and cancer slop factor go, those are in the numerator. I actually only have one example where --- where that changed without the BCF or BAF changing. So that being in the numerator, a higher RFD or CSF would result in a higher standard.

CHAIR: Higher.

MR. SMITH: Correct, Ross?

MR. BRITTAIN: Yeah. That's the math.

MR. SMITH: Make sure you explain that.

MR. BRITTAIN: That's the math. Correct.

CHAIR: They are ---.

MR. SMITH: Okay.

CHAIR: Yeah. And --- and you can see --- and also in Chris' example cyanide where only the toxicity factor changed. It actually didn't change the criteria very much. Right? Oh, it did. It did change it a lot in that case. I was looking at something --- the wrong thing.

MR. BRITTAIN: And Jennie, I just sent an e-mail to everyone with the CompTox and the RAIS database links.

MS. HENTHORN: Thanks, Ross.

MR. BRITTAIN: You're welcome.

MR. SMITH: So in --- in pink group here both the CSF or RFD, depending on carcinogen, noncarcinogen, changed and the BAF also changed. So you see greater differences there.

MR. BRITTAIN: Yeah, and in --- in that case I think there may be something going with the --- like I'm looking at RFDs and they report RFDs that are not in any of the toxicology databases that I use. And I'm --- I think what's going on there is --- because you guys know more about how they're actually using their equation. I think that they've made adjustments to the

RFD, you know, and --- and so the RFD that's reported is after the adjustments.

And that's why I can't --- like --- like that for methoxychlor, the .00002 for example. That's not in any toxicity database for RFD for methoxychlor. And so I --- I'm assuming it's adjusted, but I could be wrong about that. But I think that that --- that may --- I might have pulled out the wrong example, but I know that --- there was a couple of them. It was like I can --- I couldn't find that value anywhere.

MS. HENTHORN: So those are numbers that are in the spreadsheet that I had done for today. Those are ones generally, Ross, where somebody else had done a recalculation of the IRIS number that is after the IRIS study was published. So for methoxychlor that was from a 2010 California EPA more recent study that was used to do that calculation.

MR. BRITTAIN: Uh-huh (yes).

MS. HENTHORN: So it was an update to that IRIS number using the more recent data. And some of them are just recalculations that the IRIS criteria were calculated. The IRIS reference dose or cancer slope was calculated using an older methodology and someone went in and used the new IRIS calculation methodology and did a

recalculation. Because a new of these IRIS --- yeah, a number of the IRIS factors are really old.

MR. BRITTAIN: Yeah. Yeah. And that's the --- that's the problem with IRIS.

MS. HENTHORN: Yeah.

MR. BRITTAIN: Most --- a lot of it it's great information but some of it, particularly now, it's starting to get long in the tooth. There's more data that come out and --- and they can't get --- they don't have enough time or resources to --- mainly personnel to be able to update everything the way that they would like to.

MR. SMITH: Okay.

So I've also broken these down into compound types. I'm not sure how you useful this will be at this point, but we've got some other PAHs here. You know, we looked at that first group that the cancer slope factor is based off of benzo(a)pyrene. These are some other PAHs. Well, let's see. I --- I skipped the phenols here, these three groups of phenols, and this one is also an herbicide.

And I have over here in this column this is the EPA calculated these, whether they recognized these compounds as carcinogens or noncarcinogens, and

there's at least a couple of these where Ross, you pointed out some newer information from California EPA like for --- well, I'm getting ahead myself here.

MR. BRITTAIN: Yeah.

MR. SMITH: But anyway, in this column this is the way EPA did it. So, you know, whether they calculated it as a carcinogen, C, or noncarcinogen, NC. So we have the group of phenols and we have some more PAHs here that EPA calculated or recognized as noncarcinogenic versus the other group that we've already looked at that are based off of benzo(a)pyrene. And these actually have some reference doses. They're not all based off the same one like the other group is with the cancer slope factors.

And then we have the pesticides here. And then this is --- this is one that EPA calculated as a noncarcinogen, but as Ross pointed out here, California EPA recognizes this as a carcinogen and has a developed a cancer slope factor for it. And then we have phthalate esters.

And I have information on the --- I don't know if we want to go into this kind of level of with this about what each compound is used for. Typically phthalate esters are used as a softening agent for

plastics and of course pesticides.

CHAIR: And these --- these groupings might not be the most useful. We wanted to put them together in case we were to find any --- any research articles. They might be --- they might group the chemicals together or they might have done a research article on phthalate esters for instance. So we --- we just wanted to have that in there so we understood what kind of groups they were in.

MR. SMITH: Okay.

MR. BRITTAIN: And then there's ethylbenzene at the bottom too. That --- that's another one of the cancer versus non-cancer ones.

MR. SMITH: Okay.

Cyanide is an organic. Like I said, I do have a spreadsheet where I've gone into more detail about what these compounds are used for and where they're found and that kind of thing. But like I said I don't know if we need to go into that level of detail unless anybody wants to see anything specifically about any of these at this point.

CHAIR: So let's spend a few --- unless somebody has specific comments on this tab let's spend a couple more minutes looking at the original sheet tab,

where we've laid out a few --- showed a few more --- a few more things for you guys there, and then we'll move onto to --- to Jennie's portion.

MS. CROWE: Can we get a copy of this spreadsheet?

MR. SMITH: Sure.

CHAIR: Yes. I'll send it to you or Chris will send it to you.

MR. SMITH: Okay.

It just --- it has the same information we've been looking at. The compound type is over here in this column. We just started with the remaining compounds that we're looking at. These first ones are the ones that we've already proposed, the ones in orange here. So we got the ---.

CHAIR: So we --- we've kind of put together the information on a previous tab on this format so you can kind of see it boiled down. So the column B there is the --- is just the information we were just looking at. Column C is what changed in the calculation.

And Chris, if you can go --- if you can go ahead and talk about this column that you've gone to?

MR. SMITH: Oh, yes. This is the one where Angie had requested that we have a look at --- at

--- to --- you know by extent some of these had changed. Which ones had changed the most essentially.

So I've just put a little description in there about how much difference there is between West Virginia's current recommended category A criteria versus EPA's 2015 recommended criteria. And then I highlighted in yellow where we see --- and the two that were a greater difference, which I just went ahead in column nine an order of magnitude that was close enough ten.

So the ones that have changed substantially are highlighted in a --- or are substantially lower, being an order of magnitude or greater lower than West Virginia's currently --- current standard are highlighted in yellow. And then there are some others that have changed too, but they're not nearly as --- you know not an order of magnitude, nothing that serious. And then there's only this one that's an order of magnitude higher of a gain of BHC.

MR. BRITTAIN: Which has also been banned for its main agricultural use.

MR. SMITH: Yeah.

Well, if that helps, we can see that, you know, the remaining --- standard --- sorry, compounds that we're looking at, all of them with the exception of

--- of three here are lower. The EPA's recommended 2015 criteria are lower than West Virginia's current standards. So that's DDT, gamma-BHC and methyl bromide. And all --- all the rest are actually lower than what West Virginia currently has. So I think --- yeah, that's all the information that I have on this spreadsheet.

Does anybody have any questions about any of those?

MR. HARRIS: So this grouping, Chris, and --- well, we've seen several groupings. It seems to me that if --- if the --- if the new standards are --- are more protective or lower, that's one category of stuff. Right. And then there's things that didn't change much. We'd probably come to a quicker agreement on those kind of things. And then look more specifically at the ones that are higher. That's one way to think about it. I guess that's what --- what you were shooting for.

MR. SMITH: Right. I mean, we --- I didn't actually group them specifically that way, but I certainly could, and I could certainly group them by which --- which changed the most significantly, which are not that different like, you know, these here in particular, and then which are higher. I --- I could certainly group them that way too if you'd like to see

that.

MR. HARRIS: Well, I'm just thinking back on earlier discussions that we have had where I think Angie was saying well, we don't want to go any higher than what we previously protected. But then there might be --- industry might have some feelings about other things. And --- and if we're going to come to consensus we have to know which compounds are a concern to them as well as to everybody else. So that --- that's what my question was about.

CHAIR: Right.

~~MR. HARRIS:~~ Maybe we simplify things, you know.

CHAIR: Yeah. And I think that this column really is helpful in trying to simplify things like you're saying Larry. And the ones that aren't provided here all didn't change very much, whether they got higher or lower. I mean, 1.7 times --- 1.75 times lower in --- when you're talking about this kind of concentration is just really --- I mean, I believe that it's pretty insignificant to --- to most of us.

If we --- if we could come --- if we could have an agreement on the ones that aren't highlighted at all in column P that --- that might --- that might really

help because we've gone over the science. We've gone over how they're developed to a --- to a great extent. So we don't necessarily disagree with --- with the general method that EPA used. If it --- if they went through that method and they ended up with something that was 1.75 times lower do we really, you know, need to spend time on that or can we just accept it? Do we have any other feedback along those lines?

MR. MANDIROLA: This is Scott. I think we need to focus --- I mean, I'm not opposed to going through that and --- and seeing where everybody falls. But in my mind I think we've got a better shot of keeping consensus moving if we focus more on science on the approaches that are being made, you know, whether we agree with the BAFs. You know, not all of them. I don't think we --- we agree with all of the changes. I think there's some questions out there on where they came up with some of these BAF numbers, just as an example.

CHAIR: Yeah, and I see that chlordane is one of those that didn't change very much, and I feel like if we go back and looked at that other tab it's --- was that one of them that had that significant BAF difference between what EPA used ---

MR. BRITTAIN: Yeah.

CHAIR: --- and what is currently --- or what is at least in the CompTox database.

MR. BRITTAIN: Yes.

CHAIR: And again, I don't know whether EPA would approve of us using the CompTox information. I'm not really sure if that meets their criteria.

MR. BRITTAIN: And that might be worth asking them.

MS. HENTHORN: I don't think it ---.

MR. MANDIROLA: That's kind of where I'm going on this.

MR. BRITTAIN: Yeah.

MR. MANDIROLA: Should we --- do we focus on some of those type of decisions? I mean, I'm not speaking for everybody, but just from what I've heard, you know, I know the environmental community is not crazy about any of these getting less stringent and I also know that, you know, industry groups aren't crazy about them getting more stringent unless we're confident in the science.

So I think our first focus --- if --- if we just go down that path of what we believe --- and again, I don't want to put words in anybody's mouth. I'm just kind of summarizing my opinion of what I'm seeing.

You know, if we just start there then we're not going to get very far with just looking at --- we're only going to touch the ones that just barely change.

I think we need to try to focus as much as we can on identifying which ones we do have questions that we need to find out about as you just said, Ross. And focusing on the others if we agree with the basic science. That could be a consensus item we could come to agreement on. It may not get us to the end result of everybody agreeing on any number, but if we can go down the path at least of --- of trying to focus on the science part.

Does that make sense to everybody? I don't want to run into a roadblock because of policy stuff when we're trying to deal with the science stuff here at this point.

MS. HENTHORN: And that's kind of what I was thinking. I mean, I hate to do a spoiler alert but I go ahead and do it. I think what we were going to try say today is for the IRIS numbers, for whatever EPA has done to adjust those, they all are based on more recent science and it was --- it was truly based on either a recalculation or the use of a newer study that wasn't available when our study was done.

So as a general rule we don't have any fuss with the IRIS numbers if they are adjusted upward to the more recent science. So if there's no more recent science that anybody's found for the IRIS numbers we're great with it.

So I'm thinking that if we do that than we an go more this forward scientifically instead of focusing on this one's higher, this one's lower. Where our big fuss is going to be is with the bioaccumulation factors, and that's a scientific question not a --- not a higher or lower question.

MR. BRITTAIN: Yeah.

CHAIR: And I didn't necessarily want to keep putting off the --- Jennie presenting us with that --- that information. So we can --- I just wanted you guys to see this and then we can move on. It might be a good time now to move onto that next part of that discussion if ---.

MR. MANDIROLA: Yeah. Do folks generally agree with what I said?

MR. BRITTAIN: I do, certainly.

CHAIR: Yeah.

MS. HENTHORN: Yeah. We --- we're looking to do this with science, and the areas where we're having

issues with what EPA has done is we just feel like they --- they might have tweaked their calculations but they're using out of date science.

MR. MANDIROLA: Larry, what's your thoughts?

MR. HARRIS: Well, yeah, I --- my first simple thought was just looking at what changed, but then listening to what you said, Scott, about why did it change, what's the scientific, you know, basis of it, that would be more --- a more solid way. So if we could maybe group these things where they agree with that kind of scientific approach we can get a bunch of them out of the way that way.

MR. MANDIROLA: Yeah. That's exactly my thinking. I just don't want to get hung up --- I don't --- I don't want to get hung up on the policy part of it at this point. I mean, I think at the end of the day at the end of this four --- next four meetings we're going to eventually have to contend with that. But I don't want to --- I --- I want to see what we can come to consensus on first as we work through this process before we get hung up on the policy part of it, because everybody is going to have --- you know, every faction is going to have a little bit different tweak on the policy.

What --- what about you, Angie? Are you good with that?

MS. ROSSER: Is what you're saying that is we come up with something that it would be universally applied to all 94?

MR. MANDIROLA: We're going to try to figure out how they apply and if we agree with the general application of it. At the end of the day a number may go up and your folks may not like, and I get it. That's more of a policy decision. And, you know, we're not going to say well they --- they agreed in consensus.

But we went to try to get down the path of like --- like Jennie just reflected. You know, a lot of these IRIS numbers have changed since the 2015. Some have gone up, some have gone down. So some of them --- that's going to change the EPA recommendations both ways.

If we take a look at the IRIS numbers and can come to a conclusion that look generally we like using the new, more updated science. It seems like a good approach, that's fine. At the end of the day whether --- whether different groups decide policywise we can live with that number that's further down the path. But if we can start working on consensus on some of the

science of it I think it gets us further on down the line.

MS. ROSSER: And that the science would be universally applied. It's not --- not --- we're just not picking some out. We're ---.

MR. MANDIROLA: We're trying not to pick --- pick and choose. We're trying to say the science is good whether the numbers go up or down, understanding that with ---.

MS. ROSSER: For --- for all the compounds, for all 94 I guess is what I'm saying. I mean just for ---

MR. MANDIROLA: I mean, at this point --- at this point, we're ---.

MS. ROSSER: --- for like consistency because we got 24 out there that we're likely going to be talking about.

MR. MANDIROLA: I understand that. But again, at this point I want to focus on these 34. I --- I have a hard time --- I --- I work in small increments. It's just the way I function.

MS. ROSSER: Right. I guess --- you know, it's the argument if the science is good enough for this compound it should be good enough for other compounds,

you know. But we ---.

MR. MANDIROLA: Right. I mean, the same argument is if the --- I understand what you're saying. The argument also is if the science is good enough to make it go up it's good enough to make it go down. So whether it gets less stringent or not shouldn't matter either.

I just wanted --- like I said, at this point I want to focus on the science we're working on with these 34. You know, I'm sure the approach we take here will guide us as we work in the future, but, you know, I can't definitely say we are always going to do it this way starting today.

I just wanted --- on these compounds we're working on I want to try to figure out some consensus on as much of the science as we can as we move forward.

Does that make sense?

MS. CROWE: Can I ask a question?

MR. MANDIROLA: Sure.

MS. CROWE: When the 2015 criteria were developed did they use the IRIS numbers in that from 2015?

MR. MANDIROLA: I think that's what Ross said, yes, but there's been updates since then.

Is that correct, Ross?

MR. BRITTAIN: By and large, yes. There's a --- there's a --- there's a couple of them I'm not sure of, and those are the cancer and noncancer ones, but I haven't looked into exactly what they did, the ethylbenzene and the lindane, gamma-BHC. Those are the two that I'm not sure exactly what they used. And I --- and I haven't had time to look in --- delve into the details yet.

MR. MANDIROLA: They may be cancer slope changes based on newer studies?

MR. BRITTAIN: Well, it's just that IRIS does not have a cancer slope for them. But there --- there --- and this gets to --- you know what, we touched on this earlier so may be jumping ahead, but the reasons for --- for like ethylbenzene the reason they --- IRIS hasn't even assessed ethylbenzene for cancer in any way, shape or form. Okay.

MR. MANDIROLA: Okay.

MR. BRITTAIN: EPA does not --- has --- has no recommendation for whether it's carcinogenic or not. However, there are numerous studies showing it is carcinogenic for animals and we --- and just --- and just whether it's carcinogenic for humans that requires epidemiological study and the progress it's --- it's

conflicted with benzene because ethylbenzene goes with benzene ---

MR. MANDIROLA: Okay.

MR. BRITTAIN: --- and gasoline and that kind of stuff.

So --- so there's --- there's the issue. That's why CalEPA did a --- did a --- issued a cancer slope factor, and that's everybody in --- in toxicology uses, the CalEPA numbers.

MR. MANDIROLA: Okay.

That in general --- in general, Autumn's --- the answer to Autumn's question is they used what was available in '15 and there's more data now?

MR. BRITTAIN: Yeah.

MR. MANDIROLA: Okay.

MR. BRITTAIN: Just --- in a new --- yeah. Generally speaking, yes.

MR. MANDIROLA: Does that answer your question, Autumn?

MR. BRITTAIN: I just --- I just have a question on a couple of them.

CHAIR: And I think that's --- that's along the same lines of what Jennie's going show us.

MR. MANDIROLA: Yeah, that's what I think.

Is everybody --- instead of going through one at a time can I --- you know, does --- I guess does anybody have an issue with the way --- the approach I outlined?

CHAIR: I don't have an issue with it.

MR. MANDIROLA: Go ahead. I'll --- I'll ---

CHAIR: I get excited when --- I get excited when I think ---.

MR. MANDIROLA: I will shut up again. I keep opening my mouth and I keep saying I'm not going to do it and I keep doing it. So let --- let Jennie go ---.

CHAIR: I just --- I just get excited when I feel like we might able to --- when --- when Chris was showing us the ones changed a little and a lot sometimes I just get overexcited to thinking like if we could agree on this or that.

But I think starting with the science and obviously at the end we're going to move into --- you know, at the end of this --- this --- these meetings we're going to get to the point where we're like can you live with this, can you not live with this and we'll really get more into whether they change a little or a lot at that point. But for now we'll --- we'll go ---

we'll look closer at the science.

And with that Jennie, if you could share your screen and show us and talk about your spreadsheet that would be awesome. I'm trying to see. Is Jennie still here?

MS. HENTHORN: I am. Can you hear me?

CHAIR: Okay. There you are.

MS. HENTHORN: Sorry. I've got my camera off. I'm struggling with a migraine and I know I make faces when I'm --- when I'm in migraine mode. So camera is off so you all don't have to see me grimace.

MR. BRITTAIN: Hope you feel better.

MS. HENTHORN: Oh. It's okay. It's just one of those things. We're --- we're going to walk --- we're going to power through it today.

So this is the spreadsheet that we had circulated earlier and Chris had been kind enough to go in. I had used CSF and RFD. Chris went in and changed it so that it indicates cancer slope factors and reference doses for those numbers. And I missed cyanide in this spreadsheet. That was not intentional. It's not an organic and I keep tending to leave it off. It's my fault for doing that.

But there are the rest of the new ones.

So there's a group that before the legislature this year. They're not included. These are the other 34 that we've been talking about with Jennie forgetting to put in cyanide.

And what I did is just went through the IRIS database and pulled the numbers for the cancer slope factors from IRIS, from the current database, to compare those with the current cancer slope factors and reference doses that were used in the EPA 2015 criteria calculations. The red highlighting indicates which of the numbers drove the criterion calculation. So if something is both a carcinogen and a noncarcinogen one of those caused a lower criterion and EPA always uses the one that calculates the lower criterion.

So for example for alpha-BHC there is both a cancer slope factor and a reference dose reported. I highlighted the cancer slop factor in red because that was the one that drove the criterion calculation. It resulted in a lower number so therefore it's the number that matters for setting a criterion.

The yellow highlighting are ones where the cancer slope factor that is in IRIS is different than the cancer slope factor --- and I should --- I keep saying cancer slope factor. Either the cancer slope factor or

the reference dose in IRIS is different than the one that was used in the 2015 EPA calculation.

So some of them you'll see for the cancer slope factor say PAH, that means that EPA did not have a separate IRIS document for those but there is an IRIS document that says here's how you can calculate the other PAHs from benzo(a)pyrene. So when those occurred I just put that PAH little notation in there.

So what I'm going to do is I'm going to filter these to remove the yellow. That would mean that we are only showing the ones where numbers are the same between EPA's calculation and the most recent IRIS database. And if we do that you'll see that we have a 18 of the 34 where EPA's number that was used in 2015 agrees with the IRIS database.

And what I would propose is that this might be a good starting spot. For these it's really clear, the basis. The numbers agree with the IRIS database. There's not anything that's been done that we could identify that was more recent by EPA or --- and EPA did not identify anything more recent in 2015. So it may be that right off we can say we're done considering these cancer slope factors, we're done considering these reference doses because we think that the correlation

between EPA 2015 and the IRIS is good, and --- and we can let that go. So any ---.

CHAIR: So --- so are you saying, Jennie, that for these 18 that we're looking at right now since 2015 the IRIS database hasn't changed since then? Right? Is that what you're saying?

MS. HENTHORN: Yeah. I'm saying that honestly the IRIS database hasn't changed on most of these since the 1980s or 1990s, and --- and EPA in 2015 didn't identify anything more recent. So it's --- that's probably a good baseline. And Ross, I went back and looked at the Voluntary Remediation Program and I think that these are fairly consistent with the numbers used in that as well.

MR. BRITTAIN: Yeah. Yeah, the --- the only thing that I see out of this particular list, Jennie, that would be different is the gamma-BHC, in that --- which is also known as lindane. It's --- it's a pesticide. It was originally used a pesticide for agricultural purposes. It was banned from that so it's no longer used for that, but it's now currently used for pharmaceutical purposes, though in much lower quantities.

There is a --- CalEPA did develop a cancer slope factor for this. It is --- in animals has been

shown to cause Non-Hodgkin's lymphoma. And --- and actually the IR --- the International Agency for Research on Cancer has designated it a possible human carcinogen because of this.

And --- but that EPA has not evaluated --- actually, I'm sorry, EPA also lists this one as a possible human carcinogen, just that IRIS has not gotten around to evaluating the carcinogenicity of this for a cancer slope factor because it was banned and it's --- it's a low priority for them. They have other priority chemicals since the last review that they did. Like you said they're older reviews. There's a lot more information. They haven't updated it.

The California EPA went ahead and updated it because EPA said, you know, we're not --- we don't have time to deal with this and this what the CalEPA does, is that there's kind of a --- you know, like an unspoken agreement before the two that many times CalEPA will do things that EPA doesn't have time to do like the --- or energy to do, political will to do sometimes. CalEPA will go ahead and do some of the things like that.

So that means the only one out of this that I would --- I would say that in my --- again like in VRP and in the toxicology world that I circulate in that

number is used all the time. It's a --- it's a tier three source reported as. IRIS is tier --- tier one. If the IRIS number is there you always use that. If IRIS doesn't have a number then you go down to PPRTV, which is things that have been provisionally peer reviewed for IRIS but IRIS did not make a decision on it for one reason or another, not a formal decision. They couldn't come to consensus. And then that's tier two.

If tier two is not available then you go to the tier three, which are the sources like CalEPA. ATSDR is another source. The Office of Pesticide Program within EPA is another source for things like this as well.

But anyway, that --- that'd be my only --- my only comment on this group. Otherwise I think I --- I agree with you Jennie. This group is ready to go. I would just like to see that cancer slope factor put in.

CHAIR: And that cancer slope factor I think for CalEPA is 1.1.

MR. BRITTAIN: Correct.

CHAIR: Did you already say that, Ross?

MR. BRITTAIN: Yes, correct.

CHAIR: Whereas the reference dose is .0047. Is that in here?

MS. HENTHORN: Yes.

MR. BRITTAIN: Uh-huh (yes).

CHAIR: Okay. Yeah.

MS. HENTHORN: So I think it would be worth us being able to hit pause and go back and look at that, Ross, because I haven't.

MR. BRITTAIN: Oh, yeah. Yeah, certainly.

MS. HENTHORN: And for the others, you know, I --- and --- and that's the exactly the kind of thing that I was hoping we could do, is look for those things where they might be better or more recent science that we could evaluate.

But for this group what other discussion is there? Are there things we need to specifically look at or is this the kind of thing that you guys were hoping the group could do?

CHAIR: This is certainly the kind of thing that I was hoping the group could maybe agree on. If we can agree that if IRIS has changed anything in the last six years then at least for 17 of these 18 if we could say we're good with those numbers, we've --- we've reviewed the science, we looked at everything behind how EPA developed these, and we know that they use that method and there's no new information in the IRIS

database since then.

MS. HENTHORN: Yeah. And that ---.

CHAIR: Well, really all 18 except for maybe the question about gamma-BHC because CalEPA has --- has a cancer slope factor for it.

MS. HENTHORN: So I'm terrible at this consensus building stuff, and I know that there are folks on the phone that are better.

What would be the next step to trying to do something with that? To --- to try to see if this group has the appetite to do that?

CHAIR: I think that's a great --- a great question for consensus building, Jennie. What do we think would be the next step for us to be able to agree on --- on these?

MS. CROWE: Ross, explained about the gamma-BHC being like in that other tier where they're --- they use CalEPA.

Are there any others in this group?

MR. BRITTAIN: Not in this group.

MS. HENTHORN: Not in this group, but some of the others I highlighted in yellow are in that group.

So let's --- let's do it in reverse for a minute. I'm going to turn off my filers on these columns

by color. Is there a filter? And I'm also stupid using my laptop instead of my desktop. So if you all are giggling that's me not able to function without a mouse.

So --- yeah. If you look over at the column called discussion over here you'll see that some of these have --- I made a note for everything that was yellow. And some of them say newer IRIS assessment. So those are all those PAHs that we talked about where we know that there's a new IRIS number in --- in our date revised you'll see here that it was 2017. That was after EPA's 2015 criteria, so there was no way they could do it.

Now, for some of the others you'll see that for example on the 1, 2-dichlorobenzene you'll see that it shows a 2006 ATSDR number and it was based on a more current methodology. So on it the last time the IRIS document was revised was 1989. So in EPA in 2015 went looking they found this 2006 ATSDR number and actually adjusted the reference dose accordingly.

And there is actually I think one more that is California --- yeah. If you look at heptachlor --- oh, there's two more. There's this one here, a 1999 California EPA, a more recent calculation that was done. Down here on methoxychlor it's the same thing, a 2010

California EPA recalculation. So all of these were ones that changed prior to 2015 and EPA was able to identify from one of these other tier sources, either a tier two source or a tier three source like Ross was discussing.

MR. MANDIROLA: May I ask you a question, Jennie? So for those three that you just read for us were pre-2015, but in 2015 EPA did not pick those up?

MS. HENTHORN: No. EPA did pick them up. That's why ---.

MR. MANDIROLA: Did. Okay. Okay. My bad.

MS. HENTHORN: That's why the numbers are Still there.

MR. MANDIROLA: I misunderstood what you were saying.

MS. HENTHORN: And like I said I'm not --- I'm not firing on all cylinders today so if something comes out of my mouth, doesn't make sense, just know that I didn't intend it and call me on it.

MR. MANDIROLA: No, no, no. You --- you said it right. I just --- I flipped it in my head.

MS. HENTHORN: Yeah. So the red number let's --- let's go back to our methoxychlor. So in the 2015 calculations EPA used that .00002. The current IRIS

number is .005, and it was done in IRIS in 1990. In 2015 EPA went looking. They found this 2010 CalEPA number and they actually used that CalEPA number, that .00002 in their criteria calculations.

And this is the kind of stuff that I believe we should be scientifically supporting. If they're --- you know, I'm supportive of what EPA did in 2015, and to the extent that there are others out there where there is a more recent reassessment than IRIS. You know, like I said look at these numbers. They're all ancient except for benzo(a)pyrene. It's --- it's always --- it's always go to look for those more recent things.

So realistically --- sorry, little, little fluffy dog making lots of noise. For --- for the numbers here in this table for these 34 I think that we have I personally --- this --- this is a Jennie comment. This isn't anything else. This is a Jennie comment.

I don't have any issues with the numbers that EPA used for cancer slope factors and reference doses with the exceptions of the PAHs and possibly gamma-BHC, that we need to go back and look at it too. If there's something more recent than 2015 I think we need to go look at it. But for the ones that EPA used in 2015 that were different than IRIS I think those are good

numbers and that we should go with them.

MR. BRITTAIN: And then there's --- there's also the question about ethylbenzene and whether or not the CalEPA for ethylbenzene. I'd add that to the --- to the list as well.

MS. HENTHORN: Yeah, we --- yeah. You said that for it, it was the same thing. It was whether it was a carcinogen or not.

Right, Ross?

MR. BRITTAIN: Yeah. Yeah. EPA has --- has not assessed --- I should say IRIS has not assessed carcinogenicity for ethylbenzene. And --- and the primary reason for that is because ethylbenzene is the component of petroleum. It always comes with benzene, and benzene is a non-human carcinogen.

And that's the issue. We know --- we know ethylbenzene is carcinogenic for animals. We --- we've got that. It's whether or not it's a human carcinogen. And in order to do that they need epidemiological studies which are observational rather than experimental and they can't assign causality and they had not been able tease out through epidemiological studies the difference --- the cancer relationship between ethylbenzene versus benzene.

And so that's the problem they're running across and that's why they haven't done ethylbenzene and IRIS has not ethylbenzene. And they haven't --- they haven't done it from a cancer standpoint. They're kind of hoping that benzene will cover the ethylbenzene.

MS. HENTHORN: Yeah.

MR. BRITTAIN: So ---.

MR. MANDIROLA: So I assume that --- I assume then Ross is because when they're doing observation studies there's rare situations even in industry or petroleum industry. Where you're going, the ethylbenzene with the absence of benzene?

Is that correct?

MR. BRITTAIN: Yeah, exactly. It's a --- it's a --- it's like the PAHs. It --- it comes with other stuff.

MR. MANDIROLA: Yes. They come as a package.

MR. BRITTAIN: They just don't look at ethylbenzene by itself. It's --- you just rarely see it. So it's a low priority for IRIS to deal with. That's --- that's why they haven't looked at it. But CalEPA went ahead and did it because they wanted to for their industry purposes for whatever industry purposes.

They went ahead and ---and did it and came up with a --- a cancer slope factor specific to ethylbenzene, and mainly because they were worried about the cumulative impacts because if you're --- if you're --- if you're exposed to benzene you're also exposed to ethylbenzene. It --- it goes together.

You're also usually exposed to toluene and xylene, which are also carcinogens as well. Those --- toluene and xylene are human carcinogens. So you get the --- those cumulative impacts need to be considered when we're doing risk assessment as well. So that's why CalEPA did it. They wanted to account for it.

MR. MANDIROLA: Okay.

But EPA basically the low priority was because if they've already covered benzene as a priority you're rarely going to see it even in --- even in I would say in permitting world.

MR. BRITTAIN: Yeah.

MR. MANDIROLA: You're rarely going to see ethylbenzene without --- it's going to be at a lower --- much lower concentration typically in a discharge than benzene ---

MR. BRITTAIN: Than benzene.

MR. MANDIROLA: --- already regulated as a

carcinogen and a much lower level. So it's of importance of EPA.

MR. BRITTAIN: Yeah, generally speaking. Yeah.

MR. MANDIROLA: I mean, it --- it appears that benzene kind of covers it. And in a discharge permit that you're --- that we would be issuing, if you have RP for ethylbenzene you have RP for benzene. You're going to have a limit for benzene and that's going to be your driving force.

MR. BRITTAIN: Yeah. Benzene --- benzene has a --- is extremely toxic. We know that. And that --- that drives the --- that drives the risks at all of our gasoline sites where we have ---.

MR. MANDIROLA: Yeah. And the reality is if you're --- if you've got treatment for benzene it's going to treat ethylbenzene ---

MR. BRITTAIN: Uh-huh (yes).

MR. MANDIROLA: --- because they act similarly.

Okay. Sorry. Rambling.

Lab geek from years ago.

CHAIR: So we have ---.

MR. HARRIS: Excuse me. I think it's true

that if --- I --- I understand your argument about ethylbenzene, but if it's a carcinogen in animals it's a carcinogen in humans. I don't ---.

MR. BRITTAIN: Most likely, Larry. Yes, I would agree.

MR. MANDIROLA: I don't think there's any doubt there's carcinogen in both, but I think --- but my point was only that EPA is making it a low priority and IRIS because it doesn't really exist without benzene and benzene is already regulated as a carcinogen.

MR. HARRIS: Yeah. I got it. I get it. Yeah.

MR. MANDIROLA: That was my point.

CHAIR: Okay.

Can we talk for a minute, because I know we're --- we're running low on time, but this is an important conversation. Can we talk for a minute again about the 17 that --- that Jennie teased out? You know, once you --- I don't know if want to include gamma-BHC and make it --- I don't know if it was gamma-BHC. Yeah. And make it 18.

MR. BRITTAIN: Yeah, it was gamma-BHC.

CHAIR: But if we --- so we just looked at those 17. And this might not be something you could

answer off the top of your head without having internal discussions first because I know this is a lot all at once. I mean, I had the spreadsheets since Jennie sent it too but I can't say that I completely under --- I keep getting e-mails. That I completely got it until she just explained it to us.

But if we look at these 17 and if you feel like we could agree on these, is there any --- does anybody have some feedback on that, if they feel like we need more time? We could bring these --- these to the --- to the next meeting after having internal discussion amongst ourselves or we could talk about them right now.

MS. CROWE: I would like more time to look at them.

MS. ROSSER: Well, and I just want to back up on our approach. So I thought we were not --- going to try to avoid grouping contaminants and you know ---.

MR. MANDIROLA: Well, I think where we're --- I don't think we're ---.

MS. ROSSER: Wait a minute. Wait. Can I finish, Scott?

MR. MANDIROLA: Sorry.

MS. ROSSER: So you know, what --- what I --- the re-approach I would suggest is that we build a

consensus around a scientific approach for all, and it's kind of like a --- to me it might look like well, if --- if --- if this is not available in IRIS then blank, if it this then blank. If ---.

MS. HENTHORN: Let me --- can I try to articulate one and see if it helps, Angie?

MS. ROSSER: Yes.

MS. HENTHORN: If --- if no --- if a number has not been updated in IRIS and the IRIS number is current then we would accept the IRIS value. If a more recent tier two or their three --- okay.

If a new IRIS number has been done then we would use the new IRIS number as an automatic. If the IRIS number has not been updated but we're aware of a tier two or a tier three source that's been updated then we would evaluate those individually. I'm --- I'm doing this off the top of my head. But that would be --- that would be the approach I think you're talking about, is trying to develop a methodology like that. So ---.

MS. ROSSER: Yes. Thank you. That ---.

MR. MANDIROLA: And --- and that's what I was going to say. I --- I wasn't going down the path of we want to look at the end result numbers here. We don't even have the actual limits on here. Okay.

MS. HENTHORN: Right.

MR. MANDIROLA: What we're --- what we're agreeing to is it appears that the science approach used on these 17 we agree with because they haven't changed. And I --- I very much liked the way you articulated that, Jennie.

Is it possible --- did you write that down or did you Laura?

CHAIR: Yeah, I'm starting to write it down. It sounds to me like a framework approach, which would lead us through a flowchart of yes, no answers that would lead us to whether we need to do further review or whether we can accept something.

MR. MANDIROLA: I don't --- I don't expect anybody to agree wholeheartedly right now, but if we could put that phrase together and send it out to everybody on the call so that they can then consider that with the spreadsheet.

And --- and even if we could --- the way you broke that down Jennie was very good. If we could take and say the first part of that statement applies to these 17, the next part of that statement applies to the others in yellow that you were talking about, that were updated with better --- newer science so that folks can

consider that and they take a look at that and maybe have some sidebar meetings or discussions between now and the next meeting so we can come into the next meeting with --- with --- we could maybe kick out half of the --- over half of the compounds were dealing with based on the approach.

MS. HENTHORN: I will --- if it's okay with the group, I'll put that in like a little flowchart and you can take a look at it and maybe --- maybe use that as the starting spot.

MR. MANDIROLA: Does that sound like a reasonable approach for everybody?

MR. BRITTAIN: Okay.

MR. MANDIROLA: Not agreeing to anything right now. We're just agreeing to take a look at that statement and how --- what parameters it affects as far as the groups for the next meeting.

Everybody good with that approach?

MR. BRITTAIN: Uh-huh (yes).

MS. ROSSER: Autumn, do you have anything to add that we should be --- that ---?

MS. CROWE: I'm --- I'm willing to take a look at that approach. I don't know how long it's going to take me to go through all of this stuff, but I'm ---

I'm willing to take a look at that.

MR. MANDIROLA: Well, hopefully her spreadsheet and the articulation of --- of what we're talking about and Laura's sharing her --- Chris's spreadsheet with you, between the two, you should have all the information you're --- you would need in one of the two spreadsheets. Does that make sense? Hopefully at your fingertips.

CHAIR: Now, I think --- I think the flowchart would go a long way in helping to turn these spreadsheets into like real world like --- you know, for people that are better with words, which most of us are. You know, you look at the --- the flowchart and you're like okay, well if it has a new IRIS number this and if it doesn't then that. You know, it's --- start to look at it that way I think that will help too.

Okay.

MR. MANDIROLA: If everybody agrees with that I think that's a hugely successful start for --- for preparation for the next meeting.

CHAIR: Speaking of the next meeting ---.

MR. MANDIROLA: Consensus on that?

CHAIR: Yeah. Consensus on that?

MR. MANDIROLA: Two consensus today.

CHAIR: Yeah. You're going to get an e-mail, one e-mail per consensus and then maybe more, you know, so we can all see it as in black and white. That's great. So ---.

MR. HARRIS: If I understand --- just one more question. If I understand, Scott, what you're saying, if there has been no modifications and we accepted the science before as being rational for those 17 or whatever the number was, then there would be no reason to consider changes.

Is that --- is that where you're going?

MR. MANDIROLA: More or less. But --- Jennie is going to try to put that into words. And we're all looking at exactly the same --- but yeah. I mean, basically at least for those 17. And then the second half of her statement kind of went into what --- what she was talking about with some additional compounds in which there may have been updates to IRIS or tier one or tier approaches ---

MR. HARRIS: Right. Right.

MR. MANDIROLA: --- with additional science, and do we agree that the additional science approach should be accepted. And then if we break that into the --- the spreadsheet it'll give us the actual

compounds and give us some --- something to look at in relation to it before the next meeting so that we can then make --- make a --- hopefully decision or --- or a path forward next meeting on a host of these compounds that fall into that --- those two categories.

MR. HARRIS: Okay.

MR. MANDIROLA: That's my idea anyway.

CHAIR: Yeah. I --- I think that's a great idea.

So I personally have nowhere else that's more important to be than here doing this, but it is 12:01 and we had wanted to plan out each meeting --- each remaining meeting. But if we can just talk for a minute about the next meeting I think that would --- that would go far and that would go --- go a long way to getting to that.

When --- if you looked at the slides that I sent out earlier we do --- there is --- the events happening this coming month is that the legislation session starts on February 10th and a couple weeks later we will have our Workgroup meeting. I have that proposed as February 24th.

I believe one thing we're definitely going to do at that meeting is talk about this --- this

flowchart that we're going to see, and in relation to the spreadsheets that --- that Jennie has put together. We're going to talk about whether we --- whether we thought more about this --- this --- this approach of, you know, answering yes and no questions and coming down to whether we need to look at something more or whether we agree on it. That --- that I think should definitely be on that agenda. And what --- what else do we think should be on the February agenda?

MR. HARRIS: Well, you mean for the March agenda. What's the next step? I mean, that was the next thing.

CHAIR: Yeah. And if we had had more time I almost would have wanted to start with like May even and work backwards because sometimes when I'm planning things that's the best way because I think like what's the deadline? What --- what needs to get done by that deadline?

And I just wanted to briefly also state that in May we're going need to have our meeting a little earlier in the month than we typically do because we're going to be cutting it close to when we need to have our consensus proposed to the Secretary and then go out to public notice, which is a 45 day comment period for Water

Quality Standards. And in the meantime giving the Secretary some time to digest what we --- whatever proposed to --- to him.

And so we get into a tight timeline when summer starts, when we get towards summer to be able to propose criteria, go through comment period, have a hearing and get it to the Secretary of State on time. So I just wanted to mention that, that we're going to be a couple weeks short there.

And if --- if all would like to get together again this --- in the --- in the next couple of weeks to talk more about agendas, we can do that or I can send out an agenda just later even today and we can talk about it via e-mail.

What you guys think would work? Okay.

So for the next meeting, we've got February coming up. We're definitely going to talk about whatever we receive from --- from Jennie later --- later on. And we're --- we'll look back at the compounds in the --- and I --- does --- does everybody agree that it makes more sense to look at these in groupings as to what's changed in the --- in the criteria between the previous --- the previous EPA recommendations in 2015? It seemed like that was a --- a good approach.

And if you recall when we looked at that spreadsheet, that Chris brought it up, Ross had that column about adjusted BAF and we had looked at --- some of those really hadn't changed very much and we probably could not worry so much about those and maybe think more about these ones that --- that have another BAF out there, even if it's in the CompTox database. That --- that is significantly different from what EPA has used in its standards.

MR. BRITTAIN: Yeah. And I think it'd be good to actually make that list of the ones that we think are significantly different and then reach back to EPA and find out --- get their thoughts on that stuff.

CHAIR: Right. And --- and I'll --- I'll need to check with EPA and ask them about the CompTox database and see what their --- their feedback is on that. If that's any --- if that's something that if we were to use a different BAF that came from that database would that be acceptable to them or is that a no go.

MR. BRITTAIN: Sure.

CHAIR: So I will check with that --- check on them with that in the meantime, and --- and I'll bring that to the February meeting.

MS. HENTHORN: There's another database

that's from Canada. You have to sign up to be able to get access to it, but it's actually the one that EPA used for doing their BAF, BCF work. And I'll go back and see if I can figure that out again. But it's --- it's --- I think that the CompTox and that one actually overlap and it's the older studies. I think that almost all the studies in both of those are from prior to 2000.

CHAIR: Thank you. That would be really helpful.

Is there --- does --- do we think that it gets at the agenda setting goal --- not the goal goal, but the agenda setting that if I were to come up with a proposed agenda and send it to you guys by the end of like today or --- or tomorrow, and then we can put new things on there or, you know, adjust that before we get down to the nitty-gritty of the next meeting. I just want to hold you guys all here indefinitely to do this and ---.

MR. MANDIROLA: Why don't you send it to us for input?

CHAIR: Yes.

MS. ROSSER: Yeah, I --- I mean ---.

MR. MANDIROLA: How about that?

MS. ROSSER: Laura, if you have ideas on

--- again, I think we need to have an arc that's going to get us to May and we have ---.

CHAIR: Yeah.

MS. ROSSER: So if you have thoughts on, you know, what ---.

CHAIR: Yeah. I send that out in an e-mail and have like an organized list of --- of agenda topics that I think get us through that arc to May when we have our --- our consensus --- consensus building final.

MS. ROSSER: And we have time to present the recommended --- recommended criteria we don't currently have standards for.

MR. MANDIROLA: Correct. We got get through there first.

MS. ROSSER: That's right. That's --- that's in the arc.

MR. MANDIROLA: Yeah --- Laura, why don't you send out a proposed for comment.

CHAIR: Yeah.

MR. MANDIROLA: And you can put in your two cents beforehand and --- and we'll work through something for the next meeting.

CHAIR: Okay. Great.

MR. MANDIROLA: That way we don't hold everybody up. I know a lot of folks have a lot going on.

CHAIR: Great.

I'll send that out as Word document and turn on like commenting so that we can all comment and see what we're doing. All right.

Well, I thank you all so much for being here today, and I feel like we've accomplished a lot. You'll get some things from us out here in the next few hours, that --- like our Workgroup goals and that spreadsheet. So thank you all so much and I will see you again soon. Take care.

CHAIR: Good meeting.

MR. BRITTAIN: Appreciate it.

MS. HENTHORN: Bye.

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VIDEO CONFERENCE HEARING CONCLUDED AT 12:09 P.M.

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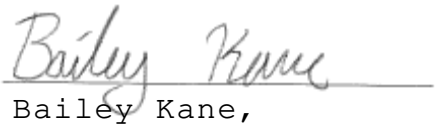
CERTIFICATE

I hereby certify, as the stenographic reporter, that the foregoing proceedings were taken stenographically by me, and thereafter reduced to typewriting by me or under my direction; and that this transcript is a true and accurate record to the best of my ability.

I certify that the attached transcript meets the requirements set forth within article twenty-seven, chapter forty-seven of the West Virginia Code. This notarial act involved the use of communication technology.



Bailey Kane,

Court Reporter