



Episode Title: Re-Release: Implementing Lautenberg -- A Conversation with Former OPPT Director Jeffery T. Morris, Ph.D.

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Lynn L. Bergeson (LLB): All Things Chemical will reach our third anniversary on October 23, [2021], and we want to share this celebration with you. Everyone who sends us an e-mail at podcast@lawbc.com during October will be entered into a prize drawing. Prizes include headphones, books authored by us here at Bergeson & Campbell (B&C[®]), TSCA Tutor[®] classes, and other items we think our sophisticated chemical sector listeners will enjoy. Your e-mail can also suggest guests or topics you would like to hear in the coming months, provide feedback on how we're doing, or just be an opportunity to say hello. Go to our web page at www.lawbc.com/podcasts for more information.

As we look back on the last three years, I wanted to bring back an older episode from the summer of 2020, Implementing Lautenberg -- A Conversation with Former OPPT Director Dr. Jeffery Morris. During this episode, I spoke with Jeff Morris about how the Office of Pollution Prevention and Toxics (OPPT) implemented Lautenberg back in 2016 and how [the Toxic Substances Control Act] TSCA can be implemented in the future to address social inequities and achieve its goals of environmental justice (EJ). I hope you enjoy it and take this opportunity to listen to some more episodes from our archives.

Hello, and welcome to All Things Chemical, a podcast produced by B&C, a Washington, D.C., law firm focusing on chemical law, business, and litigation matters. I'm Lynn Bergeson. This week, I sat down with Dr. Jeff Morris, immediate past Director of [the U.S. Environmental Protection Agency] EPA's OPPT, the EPA office that regulates the industrial chemical sector. Jeff directed EPA's implementation of the 2016 amendments to TSCA and headed the office most immediately impacted by the significant changes brought about by the Lautenberg amendments. In our discussion, we talk about how Jeff and his OPPT colleagues managed the daunting task of implementing a new law and how the Agency has fared since the law's enactment four years ago. We discuss Jeff's interest in EJ and how TSCA might be used to address the impact of environmental harms and their disproportionate adverse impact on people of color and the poor. We also discuss Jeff's important role in EPA's Office of Research and Development (ORD) and its research

program on nanomaterials and nanotechnology, and how his background prepared Jeff well for addressing TSCA's application to emerging chemical technologies. We conclude by learning more about what Jeff is up to now in his new role as a principal in Jeff Morris Solutions LLC. I really enjoyed my conversation with Jeff. He and I have known each other a long time, and I have long admired Jeff's integrity, his commitment to public service, and his epic understanding of chemical policy, science, and regulation. Now, here is my conversation with Jeff Morris.

Jeff, it is so good to chat with you today. I'm really excited about our conversation. Welcome, and my thanks for being here.

Jeffery T. Morris (JTM): Well, thank you, Lynn. It's great to be with you.

LLB: Let's jump right in. You ended your very distinguished career with EPA as its Director of the Office of Pollution Prevention and Toxics, which we in the biz refer to as OPPT, as you know. OPPT was command central for implementing the Lautenberg amendments in 2016. I'm really interested in your views on how that went. Maybe before you do that, you can walk us through a little bit about your varied career at EPA.

JTM: Sure, Lynn, I'd love to. Yes, it's been a varied and very rewarding career. I began my career at the EPA in the Office of Pesticide Programs (OPP) and looking at pesticide chemicals that had triggered some sort of risk concern, be that ecological or human health. For me, that was a really useful introduction to the notion of looking at chemical substances through a benefit-cost lens, recognizing that pesticide chemicals are important for a safe and abundant food supply. And certainly, as we recognize now, also the importance of pesticide substances in ensuring that surfaces are clean from germs, viruses, etc. That was an excellent introduction into the importance of chemicals in the economy and looking at environmental health concerns through that lens.

I left the Pesticide Program to go to work for ORD, where I worked in the Office of Science Policy in Washington, D.C., working with the other EPA program offices on how science can be brought into Agency decision-making. That was extremely useful in understanding, from a chemical perspective, how the entire suite of environmental laws impacts chemical substances in one way or another. That really was a nice foundation of knowledge to begin in 2011 to join the OPPT, where my portfolio as the Deputy Director at that time was the -- what we called the core TSCA program prior to Lautenberg, for both new and existing chemical substances. Then of course, the Lautenberg Act came along in 2016. I became director of the office at that time and began the implementation process that I know we're going to talk about this morning.

LLB: Gosh, Jeff, I think often about your career because, frankly, I can think of no better person to lead OPPT at that pivotal time in 2016, given the Lautenberg amendments. But your background with Pesticides, and Research and Development, really it was just a wonderful background to taking on this daunting task. As an outsider -- somebody who admires my colleagues at EPA, but I don't work in the Agency -- I can only imagine what it must have been like on June 22, 2016, when you and your colleagues recognized that TSCA was changed in a huge way. And now the burden, and the challenge and the opportunity of implementing it, fell on you and your colleagues. What was it like on that day in June and thereafter? Could you give us some thoughts on that moment when President Obama signed the new law into existence and you got the ball rolling?

JTM: Sure, Lynn. It was an exciting time for us. When the President signed the TSCA amendments into law, we were really looking forward to implementing, to realizing the promise that we recognized in these amendments to advancing chemical review and management for industrial chemicals. Now, at the same time, when we saw the final language and saw the ambitious deadlines for implementation, it was somewhat daunting. And for new chemical substances, recognizing that the clock started immediately, it was -- we recognized it was a big challenge. But I recall gathering staff together and pointing to the amendments and saying, "Look! The amendments specifically reference the TSCA Workplan." They reference the risk assessments we'd already done, pre-Lautenberg. And I said, "This is an acknowledgment by Congress that they have confidence in us, in you, in implementing the law. And it's an honor and a challenge for sure. But we're going to do a great job."

Now, we recognized also, Lynn, almost immediately, the importance of moving out quickly to put the infrastructure in place, or at least propose it. The law, as you know, called for the promulgation of what we called framework rules for chemical prioritization and risk evaluation within one year's time. We also recognized that this one-year time span was going to cross administrations. It would be the end of the Obama Administration and the beginning of whatever new administration would come to be. We believed that it was very important to get proposed rules out, identify the first ten chemicals during the current administration, to give the next administration the best opportunity for meeting that one-year deadline. We worked very hard to do that, and I'm happy to say that we were successful in doing that. That was -- it was excitement mixed with trepidation in meeting the deadlines, but there was a lot of energy in the office in moving forward and making it happen.

LLB: You noted the reality that must have seized the moment when, as you noted, Jeff, you actually read the language of the new law. I know one of the issues that surprised us the most was the immediacy of everything; there was no phase-in period. Your remarks focused on the development of the implementation framework rules, which of course have proven to be absolutely critical to TSCA's implementation. Also though, I think the immediacy of the implementation program had a direct hit on the new chemicals program. And given your background and your leadership of the office at that time, I'm guessing your colleagues came to you and basically said, "Oh, my God! We have to manage the new chemical program, apply the new law to chemicals being notified right here, right now, *and* implement everything else." You're being very deferential and polite, but I would have been totally freaked out if I were you.

JTM: Well, it's true that the new chemicals provisions started immediately, and they were a challenge because, as you know, there were really significant changes to Section 5, new language to try to figure out: "reasonably foreseen conditions of use," the new determination of "not likely to present unreasonable risk," and important element of needing to make it an affirmative determination to every single chemical that came to the premanufacture notice (PMN) process, the new chemical process. So yes, recognizing that we had to work essentially in two major tracks. One was to understand the new language in Section 5 for new chemicals, apply it immediately, while we worked in a parallel fashion to develop the framework rules.

Now we recognized for new chemicals that the understanding and implementation of this new language couldn't be done in the abstract. We actually had to work through specific cases. We made a decision to do a re-review of cases and also to apply the new language immediately to the new ones that kept coming in. One of the things in the new chemicals

program, as you know, is that they keep coming in. But we knew it had to be learning by doing, that we would actually have to apply the new language to specific cases and figure it out on individual new chemical cases because the attributes of each case, the nuances are unique to each one. And you can only do this through the actual application to a case. So that took -- yes, that was a lot of work, a lot of discussion within the Agency about what these new terms in the language meant. So it definitely was a tremendous challenge.

LLB: Did your office have what it needed then in 2016 in -- clearly, everybody knew this was going to be coming out at some point. But in terms of people, skill sets, money, resources, did you feel like you had what you needed to take on this tsunami of new regulatory initiatives?

JTM: Yes and no, Lynn. On the one hand, as you indicate, our most important resource was our people. We had great people and great expertise, so we felt confident that we had the know-how to do this. At the same time, in the years preceding the 2016 amendments, we had lost a number of people through attrition, and demographics suggested that we were going to continue to do so. We recognized that we would need to do significant hiring to staff up, and the Agency has worked very hard to do so. We were glad to see that there is a fees provision in the amendments that would allow us to help support additional costs and additional resource needs, including new people. Also, we had -- as you know, Lynn -- we had done risk assessments through the Workplan process prior to Lautenberg. That experience was extremely helpful. We had taken a few through peer review and issued the final risk assessments. That was extremely helpful experience, and with the knowledge that by Congress in the amendments. And I think that without that experience, it would have been even more difficult to take on the challenges.

LLB: Absolutely.

JTM: From a people perspective, it was a matter of leveraging the great expertise that we had on board, continuing to hire up, and I think recognizing the challenge that would come through additional information systems. We recognized that the -- one of the implications of the new requirements for the TSCA program would need to be increased information management and transparency. We recognized we needed to build those resource requirements into the program as well. It's been an ongoing task to continue to staff up, to build systems, to leverage these programs to support aspects of the program. But I think overall, we felt that the experience that we had gained prior to the Lautenberg Act through the existing chemicals program, of course, the tremendous expertise and information systems we have for new chemicals through our work with structural analogs and the expertise we had -- people looking at chemical structures over decades to understand how to look at new substances coming in were strengths that gave us confidence that we could succeed.

LLB: Well, I think you're being your usual modest self, Jeff. Your unique background from OPP and your understanding of risk evaluation and cost-benefit analysis; you were able to deploy and call upon those skills and transfer them into OPPT. OPP has a long and rich, really rich, tradition of risk evaluation and risk assessment.

I am cognizant of what you're saying about EPA OPPT's experience with the Workplan, Chemical and some of the risk evaluations that were underway and were essentially grandfathered under Lautenberg. But thank goodness you were in the driver's seat and had the skill set that you did that you could help build those internal core competencies that are now just fundamental to the implementation program.

JTM: Well, thank you. And I had a lot of help. The management team at -- in the office -- and indeed, across the Office of Chemical Safety and Pollution Prevention (OCSPP). My colleagues in OPP were very supportive, and we -- as were our colleagues in ORD, to really come together with us to help take on these new chemical evaluation responsibilities. I think the Agency as a whole really pulled together. And I am extremely grateful to all the colleagues, and not just within OPPT, but in the other offices that came together to help us. From my perspective, it was extremely satisfying and gratifying to see the Agency rise to the occasion with us and just be really supportive in meeting the challenges.

LLB: And successful. I mean, I share your view that the implementation of this really incredibly complicated new law -- maybe not so new now; it's been four years -- but it has been a resounding success. You shared some of your observations regarding the implementation program and the arc of EPA's efforts over the past four years when you participated in the Environmental Law Institute and Bergeson & Campbell: Four Years Later program back on June 24. I'm wondering if you could share with our listeners some of your observations regarding your view of the last four years. Successful? Yes. Could things have been done differently? What is your view now?

JTM: Yes. When we just recently hit the TSCA at Four mark, it really made me think about what brought us to this point and where we need to go going forward. And it's my observation that -- and as we've just talked about, the Agency really has been successful in meeting the challenge. To this point, my view is that whether it was setting up the framework rules, putting out the first risk evaluations, doing the first prioritization process, setting up the strategy for non-animal testing, these tasks have demonstrated strong EPA leadership, and the Agency is to be commended for that.

And I think now, as we move into the fifth year of TSCA implementation, it's a good point in time to look at how, in addition to all the work the Agency has done and will continue to do, how TSCA stakeholders can find opportunities to take on leadership roles. Certainly there are always going to be inherently governmental functions that the EPA must perform. That said, there are, I believe, a number of areas where industry and other stakeholders can take leadership roles. For example, there are still 50-plus chemicals on the TSCA Workplan that haven't been prioritized yet, but they will be, per the law, at some point. So now would be a good time, I believe, for stakeholders to take a look at the rest of the Workplan, I'll call it, to see where there are opportunities to identify information needs, areas perhaps where information needs to be generated or compiled. Perhaps there's opportunities to begin thinking about how evaluations of those chemicals might be scoped and dig into some of that and begin to develop an information base that will ultimately support Agency decision-making.

I think that that can be extremely useful. Also, we now know that the Agency has identified, through its evaluation process, unreasonable risks for certain chemical substances. And as the Agency moves through the remainder of the Workplan, it's likely that it will for other chemicals as well. I said in my remarks at the TSCA at Four event that I don't think it is prejudging the risk evaluation process or getting out in front of the Agency if industry stakeholders begin to look at risk management for chemicals, either the chemical that EPA has identified and regional risk concerns, or may in the future to begin to discuss what flexibility there may be in implementing risk management approaches. Because my concern is, given the quite compressed timeframe that the statute allows for moving from the identification of unreasonable risk determination to actually proposing and implementing risk management measures, that's not a lot of time. And if the Agency and its stakeholders

go into that process without some early discussion work going around what can be done to mitigate risks, then it's going to make it -- or rather it *could* make it a very difficult process.

So that's just another area where I think there's opportunity for early stakeholder engagement. But the overall theme was, to this date, largely and appropriately, the EPA has been the active party in making things happen to implement TSCA. And while it will continue to be, that now is the time to look for, I think, increased opportunities for stakeholder leadership in TSCA implementation.

LLB: The two areas that you note in particular, Jeff, I think are spot on. There are 50 or so chemicals on the Workplan chemical list. EPA's need to prioritize those comes as a surprise to no one, so that is low-hanging fruit for interested industry stakeholders that wish to collaborate with you and others in helping get that prioritization underway.

With regard to risk mitigation, I noted in a blog not too long ago that industry stakeholders submitted a Section 21 petition urging EPA to initiate a rulemaking to help think through what some of the standardized approaches and other regulatory responses for risk mitigation under TSCA, given the fact that risk evaluations are now coming to completion with regard to the first ten and then we'll have another 20 in a few short years. What *are* those risk mitigation measures from an administrative EPA perspective? Any views on that Section 21 petition that industry filed not too long ago? And any insights on what EPA might do with that?

JTM: Well, right. And the petitioners point out the need for what I believe they called guardrails to help guide the process. And true, as I just mentioned, that the process will be quite a compressed one to move through the formal notice and comment proposed and final rulemaking for completing the risk mitigation measures. I think it's -- the petitioners ask some very important questions, and I think that it can only be helpful if there is a clear understanding of how this process will play out. Without prejudging how the Agency is going to come down on the petition itself, I think that the petition raises some very important issues. But it's -- from my perspective, it's really a balancing act. It always is. I think with these type of framework-like regulations, on the one hand, to the extent that the government can provide clarity and transparency and predictability on how the process will go, that can be extremely useful to everyone and is an important public service.

At the same time, my view is one doesn't want these kinds of rules to be so prescriptive that the Agency's hands are tied. I do believe -- and I think it's actually evidenced by what the EPA has done in the [persistent, bioaccumulative, and toxic] PBT rulemaking effort, that TSCA provided a broad suite of potential risk mitigation approaches that are -- go the range from providing additional information all the way through to making concentration changes to, of course, not allowing particular uses. But I do think this is going to be a very important discussion for the coming year, as we move from evaluation of the first ten chemicals to actually going to the next step in the process. So irrespective of where the Agency comes out on the petition itself, I think the introduction of these issues described in the petition are very timely and important and will need to be discussed in a very robust fashion over the coming year.

LLB: Totally agree. And for our listeners, a copy of the petition that was submitted and to which EPA must respond within the next, I think, maybe 60 days is on our website under the blog, TSCA blog. For those of you who are unfamiliar with what Jeff and I are chatting about, please take a look. And as you correctly note, Jeff, irrespective of how EPA comes down on the petition, just the articulate identification of critical issues in the petition is a very helpful

first step in kind of providing a framework for the Agency in going forward and thinking through how to address unreasonable risks that have been identified through the risk evaluation process under EPA's risk mitigation tools via TSCA. So very interesting development, and I agree with you. It's critically important to get those issues sorted out sooner rather than later.

Let's pivot and talk a little bit about areas where, I think, EPA probably did struggle a little bit in the early days of Lautenberg, particularly with respect to new chemicals. We've already talked about how the Agency was confronted with immediately implementing a new law. And because TSCA is pretty relentless with regard to Section 5 notifications, it's not a stop-and-start process. New chemical innovations come online every day. To my eye, as an industry participant, I think EPA has really gained some solid footing over the past several years with regard to getting its head and management procedures around new chemical notifications under TSCA Section 5. But can you give us a sense of the early days? What implementation efforts were effective? What has changed over time? And how has the Agency evolved in that regard?

JTM: Yes, Lynn. I think that early on, we were really trying to get our arms around some of this new language, like "reasonably foreseen conditions of use." The law requires the Agency to consider not only the *intended* conditions of use. In the new chemicals construct, the intended conditions of use, the new chemical would be that that's described in the new chemical application or PMN, but also reasonably foreseen conditions of use. I think we talked a lot, both in public meetings and within the Agency, about what that means. And we landed on the notion that it shouldn't be something that's just a hypothetical "could happen," but that there's information to suggest that it's reasonable to foresee that if a chemical were to make it into commerce, that it could be used in ways that are different from those described in the application that EPA reviewed and did its risk evaluation on. That took much discussion, both publicly and within the Agency. And I think that the Agency has evolved considerably in that particular thing.

But there were other areas as well, so prior to the Lautenberg Act amendments, there was no determination called "not likely to present unreasonable risk." The Agency would look at something if it presented or may present reasonable risk, then there was some sort of action taken. And if there wasn't, generally speaking, the chemical was dropped from review. But actually, to have to make a determination of "not likely to present unreasonable risk" meant unpacking those terms.

What does "not likely" mean? Likelihood, often we associate with some sort of probability. What's that mean? And what does "unreasonable risk" mean in these terms? What is "to not be likely to present unreasonable risk" actually mean? I think that, as I mentioned before, I think we felt that it would require going through individual cases to try to figure this out. And I think that there's been a lot of progress made.

I *do* think that one of the areas that needs continued discussion is in the area that has been called "new chemical bias," where there's been this concern that a new chemical comes into the EPA review process; it's reviewed on its own without looking at how that chemical substance might be a potential replacement for an existing chemical substance that may have a risk profile that may be of even more concern than the new chemical substance. How do you directionally move in a way that brings new chemicals into commerce in a way that I would say could provide a net environmental and public health benefit if indeed a chemical were a substitute for others that may be problematic? How do you factor that into the

Agency's review? How do you look at relative risk between a chemical substance that's a new one and one that is an existing chemical?

This gets to things like how is a chemical's pollution prevention attribute described in the new chemical notice? And how does the Agency consider those things? I think that this is an area that is ripe for continued discussion. The Agency has been very focused on the crush of work for new chemicals, trying to reduce the backlog and dealing with their fundamental issues, such as we just talked about, this new language and incorporating that in decision-making. But there are issues like how we do meet the TSCA Section 2(b) requirements that we not impede technological innovation. How do we that?

One area of my career that we didn't -- I didn't mention at the beginning was my experience with -- in ORD with the Nanomaterials Research Program. And I, toward the end of my ORD tenure, ran the Nanomaterials Program and worked with our international colleagues to begin to understand how nanoscale substances, whether it was their shape, morphology, crystalline structure, particle coding, what have you, how those various attributes of the substance could affect the toxicological profile of the substance. And I think that one takeaway from that experience that applies to new chemical substances is that being very thoughtful about how the properties of a new substance can be adjusted, or its use profile can be adjusted to allow it to be safely introduced into commerce, is something that can be extremely valuable in confidently moving new substances into commerce in a way that's economically valuable.

Ten years ago, we were talking about these attributes of nanomaterials, and we -- and those discussions, I believe, have led now, a decade later, to nanotech -- the successful introduction of nanomaterials into commerce and have resulted in new products, new applications that have provided tremendous performance benefits in a safe way. And I think the same sort of thinking needs to go into -- for industrial chemicals, broadly for new chemicals -- on how, when you look at a new chemical substance, what -- look broadly at the applications for which this chemical is designed and from a sort of net environmental and health benefit from a relative risk perspective, is the introduction of this substance into commerce going to move us directionally where we want to go? And I think that that is -- it is an area that is very ripe for continued discussion.

LLB: I just could not agree more. Jeff. This is an area that we here at B&C, Dr. Engler, our Director of Chemistry, we kind of really pound away on these issues, as did Congressman Shimkus, when he spoke at the TSCA at Four on just how important chemical innovation is to ensure a sustainable and safer future. I can confess that some of our clients, in submitting new chemical applications, have experienced some -- a little bit of resistance, not from anything other than that new chemical bias, as you noted, the fact that a new chemical has to prove much more with regard to its safety and absence of risk and sustainability than do existing chemicals that may not be up for any type of risk evaluation for literally decades. That burden is high, and the showing is important, so I couldn't agree more that that is an area that industry and EPA could easily collaborate together. And I know through your new consultancy and maybe this firm, maybe we can make something happen there because I think that would be great.

Another area that I know you are just passionate about, Jeff, deals with EJ and how might new TSCA be used effectively? Is there a role for the new law's provisions and EPA's implementation of it? Is this an area that you think is another focus area where stakeholders could get together and perhaps think of creative ways to deploy the law's authorities in a way that might benefit communities of color and other economically disadvantaged areas

where pollution has been demonstrated to have a disproportionate and adverse impact on community residents in these areas?

JTM: Yes, Lynn. I think that today's events clearly call on all of us as Americans to consider how we can help advance social justice in our country. And those of us involved in the TSCA area have opportunities through the TSCA amendments to contribute to EJ. I'm writing on this, and without getting into scooping my own article out there, I will say that because TSCA very clearly requires the Agency to consider potentially exposed and susceptible subpopulations and does so in a way that I believe is unique to other statutes, that there really is an important role for TSCA in using those provisions to advance EJ and social justice. At the end of the day, for people in this country, issues related to chemicals are where they live, how they interact with chemicals. And it's very much a place-based set of issues for them. So while the Agency for TSCA chemicals needs to make national regulatory decisions, it seems to me that the provisions in the TSCA amendments really speak to the unique role that TSCA can play in looking at populations that may be exposed to and/or susceptible to chemical substances in a way that, perhaps the -- what we call the general population may not be -- and that there may be no other law on the books that for industrial chemicals can provide the same opportunity that TSCA does. And as you said, Lynn, I think that this is in particular an area where stakeholders can really play an important leadership role. And I don't think that means at all that the Agency is not interested in this. Not at all.

But when we talk about how chemicals interact with people, with communities, those who manufacture, process, use chemicals seem to me to be the most knowledgeable and the best place to lead dialog on how concerns that are expressed by communities can be addressed, in a way that both advances social justice and, as we just mentioned, continues the important role that chemical use and innovation play in our society. We all benefit, I think, when we keep both of those objectives in mind. And so this is an area that, you're right, I am passionate about, and I will continue to do what I can to help advance what I see as a real opportunity to use the TSCA amendments.

LLB: I totally agree, and I look forward to reading the article that you've referenced when it comes out, which I hope is soon. Because we've identified three very specific areas where TSCA stakeholders and EPA can work collaboratively together implementing better EJ policies that TSCA can be influential in addressing, addressing the new chemical bias and the new chemical program, and how do we think through implementing risk mitigation measures that undoubtedly will come about as a consequence of the ongoing risk evaluation process. So there's just so much to be done, so little time.

Let me ask you about another area in addition to many of the other provisions we've talked about, and that's TSCA Section 8(b). For our listeners, that's the section that authorizes EPA to develop this TSCA Inventory, which for many, many years included a list of chemicals consisting of some 86,228 substances. That was, I think there give or take, the number of chemicals listed on the Inventory at the time Lautenberg was implemented. EPA was directed, and you were charged with implementing this directive, Jeff, to identify what are the chemicals listed on that Inventory that are in fact active in commerce? Because we all appreciated that a fair number of those substances probably were no longer active. EPA actually went about and issued a rule, and stakeholders ultimately identified active substances on the Inventory. The number came out eventually to be about 47 percent of the 86,000-plus chemicals were found to be actually active in commerce or 40,655 substances. My question to you is, were you and your colleagues surprised with the metric that ultimately evolved that roughly half the substances listed on the TSCA Inventory, in fact,

were no longer active. What was the realization within the Agency, and what did you do with that new learning?

JTM: I don't know if we were surprised by that. I think we had always suspected that the number active in commerce was much lower than the 86-plus thousand. When it came out to be a little bit less than half, I personally didn't even think it was going to be that high. But it was extremely helpful because we have for years had difficulty articulating the universe of chemicals that we ought to be focusing on. We'd always hear people say, "Oh, there are over 86,000 chemicals in commerce," and we didn't believe that to be the case. So I think getting that number of 40-plus thousand has, I think, been extremely useful to all of us, the Agency and stakeholders, in getting a better sense for where we should be focusing our attention.

I will say, Lynn, that I think that the exercise, in addition to giving us this overall number, was also extremely helpful to understanding how various categories or groups of substances, where they fell in the active/inactive area, for example, the PFAS chemicals, or the per- and polyfluoroalkyl substances. Now, I think that understanding how many of those were on the active Inventory was also very helpful, and likewise for other substances. Just generally, getting a better sense for what submitters identified as active was useful to us. And I think that the exercise hopefully was also useful for submitters in taking a -- in understanding what is available in commerce and going through that process of looking at the chemical substances they need to perform their functions and do their jobs and understand what manufacturers are identifying them and having the processors come in and weigh in as well. I hope that activity was useful to everyone. But I think for the Agency going forward, it's still a big number, right?

LLB: Well, it is. It's huge, but it's way better than 86,000.

JTM: Right, right. And as the Agency continues its work to prioritize and evaluate chemicals in the TSCA chemical universe, it's an important piece of information to have.

LLB: I want to wind up our conversation, Jeff, with asking two questions, and they're hard, the first one in particular, because I want you to identify what you regard as the highlight of your very, very distinguished career at EPA. And then tell our listeners a little bit about what you're doing right now with Jeff Morris Solutions. I think given your extraordinarily sophisticated, yet practical, understanding of industrial chemicals, risk evaluation, risk mitigation, and the power of TSCA to address societal problems like EJ, how are you taking your incredible skills and deploying them right now?

JTM: Well, as far as the highlight of my career, I had a wonderful, incredibly rewarding federal career, EPA career. There are so many things to look back on with a great deal of fondness. But I do have to say that putting the TSCA infrastructure in place, on time, on budget, and in a way that I think has set the Agency on a very firm path, very strong and firm path toward realizing the promise of TSCA was a real -- *the* highlight for me.

When I left the Agency early this year, I thought very carefully about what I wanted to do with the next phase of my life. And I recognized that all the experience that I've gained in the Pesticides Program and also Research and Development -- and of course with the TSCA program -- gives me expertise that I feel is relevant and useful to share. I set up Jeff Morris Solutions for the purpose of helping clients find solutions to issues concerning bringing new chemicals to market, or keeping existing chemicals on the market in a manner that is economically viable and environmentally protective, and does so in a way that really does

move toward maximizing the -- what I call the -- net benefit to society. So it's incorporating these things we've talked about, whether it's looking at ways to bring innovation, innovative products into the market, to finding ways that risk can be managed in a way that addresses the risk concerns, but also, where possible, allows important chemical uses to continue in a safe way, and does so in a way that recognizes that social justice, EJ, and other concerns are important ones that we should all take into account as we look for ways to continue to innovate and advance chemical manufacture and use in the United States. So I think that bringing that perspective into clients' discussions with the broader community or the Agency can be very useful. So that's what I look to do now in this next phase of my life.

I also have moved to my wife's hometown of Tryon, North Carolina, in western North Carolina. I've been looking to be active in my new community as well. Both of those things are very important to me, and I really appreciate the opportunity, Lynn, to talk with you about where we are with TSCA, because I just feel, as we've discussed, that there are so many opportunities to build on the successes that we've had up to this point and to really continue to make progress in realizing the promise and potential of the Lautenberg Act amendments.

LLB: Well, thank you, Jeff. And I really, really, really welcome the opportunity to get together with you today. And thank you for answering the question, "What is the highlight of your EPA career according to you?" Because to be honest, I was having a hard time. There are so many: your contributions to the Pesticide Office, your really important contributions to ORD in providing a conceptual framework for appreciating the commercial value of nanochemicals, nanoscale materials, and building that regulatory framework that you were able so easily and effortlessly to merge with the new chemicals program at EPA OPPT, and your building the TSCA/Lautenberg infrastructure. I mean, all of these contributions are epic. And we in the industrial chemical community owe you a debt of gratitude for your commitment and integrity and scholarship in building the Industrial Chemicals Program. So thank you for being here. Thank you for all that you have done in your career at EPA. And we here at B&C look forward to working with you as we can, perhaps collaboratively tackle many of the opportunities and challenges that lie ahead of us. So thank you again, Jeff, and all my best to you in your new home in Tryon, North Carolina.

JTM: Lynn, thank you very much. It's been a pleasure.

LLB: My thanks again to Dr. Morris for speaking with me today about EPA's implementation of the TSCA amendments, nanomaterials and nanotechnology, and Jeff's new consultancy, Jeff Morris Solutions.

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