Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 8/12/2020 9:55:19 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]
**CC**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Request for GEN X Material

I am having Casey look at IRIS and OW assessments. OPPT doesn't apply the same ones we do (no DB UF) and other agencies like ATSDR use their own guidance (No DB UF for ATSDR either)

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 12, 2020 5:14 PM
**To:** Weyer, Erica <weyer.erica@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Re: Request for GEN X Material

We will start pulling these materials together. I wonder what universe of chemicals we should look at fro UFs. That's a pretty big job, unless we just provide some examples.

Sent from my iPhone

On Aug 12, 2020, at 5:08 PM, Weyer, Erica <weyer.erica@epa.gov> wrote:

Hi all,

Please send this material to Deborah and myself when you have it compiled – or let me know if you need to send in batches.

Thanks,
Erica

---

**From:** Aguirre, Janita <Aguirre.Janita@epa.gov>
**Sent:** Wednesday, August 12, 2020 4:54 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>
**Subject:** Request for GEN X Material

Hi Deborah, Betsy, and Erica,

As a follow-up to today's meeting on GenX, please prepare the following material that Charlotte termed the "care package" during the meeting. I may receive additional asks from Owen, but here's the list from Charlotte and Dave so far. Once you have the package, please send back to me and I'll put it in their reading queues for attention. I think I'd prefer the information to come in one package, but if you need to batch certain items, let's map out a plan.

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5) The two new publications on the reproductive/developmental toxicity of GenX chemicals (Conley et al., 2019; Blake et al., 2020)
6) Comments from
    a. Environmental Working Group
    b. Pennsylvania Department of Environmental Protection
    c. Michigan Department of Environmental Quality
    d. Natural Resources Defense Council
    e. Sierra Club
    f. ACC
    g. Dr. James Klaunig, Dr. Damian Shea and Tox Strategies LLC (on behalf of Chemours)

Thank you,
Janita

---

**Janita Aguirre – Special Assistant to David Ross and Anna Wildeman**
U.S. Environmental Protection Agency | Office of Water | Office of the Assistant Administrator
Phone: **(202) 566-1149** | Email: aguirre.janita@epa.gov

---

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 8/13/2020 12:14:54 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Request for GEN X Material

Weird, maybe two subfolders will show up at some point. Sharepoint is dumb sometimes

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 13, 2020 8:04 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

okay that is weird, I had a subfolder with the public comments in the main folder for IO info.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, August 13, 2020 7:58 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

Okay, I double checked the folder. I didn't see the public comments in there so I added the ones they requested.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 13, 2020 7:32 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

Okay can you guys just double check what is in the folder, esp the public comments. I set up time to talk to Betsy about the RfD from Blake and the document itself for later today.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, August 13, 2020 6:24 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

I really think that the updated assessment and the response to comments document needs to be in the care package. The updated systematic review of the studies is in the assessment.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, August 12, 2020 6:32 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

Especially the public comments, I think there is more there than they are asking for but I couldn't remember if like EPN included EWG.

---

**From:** Strong, Jamie
**Sent:** Wednesday, August 12, 2020 6:26 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Request for GEN X Material

I uploaded everything to a folder on Sharepoint except what is highlighted below. Please check my work. We need to talk about the first ask (RfD based on Blake).

---

**From:** Aguirre, Janita <Aguirre.Janita@epa.gov>
**Sent:** Wednesday, August 12, 2020 4:54 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>
**Subject:** Request for GEN X Material

Hi Deborah, Betsy, and Erica,

As a follow-up to today's meeting on GenX, please prepare the following material that Charlotte termed the "care package" during the meeting. I may receive additional asks from Owen, but here's the list from Charlotte and Dave so far. Once you have the package, please send back to me and I'll put it in their reading queues for attention. I think I'd prefer the information to come in one package, but if you need to batch certain items, let's map out a plan.

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    a. Environmental Working Group
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    d. Natural Resources Defense Council
    e. Sierra Clubj
    f. ACC
    g. Dr. James Klaunig, Dr. Damian Shea and Tox Strategies LLC (on behalf of Chemours)

Thank you,
Janita

---

**Janita Aguirre – Special Assistant to David Ross and Anna Wildeman**
U.S. Environmental Protection Agency | Office of Water | Office of the Assistant Administrator
Phone: **(202) 566-1149** | Email: aguirre.janita@epa.gov

---

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 8/13/2020 9:02:34 PM
**To**: Nagle, Deborah [Nagle.Deborah@epa.gov]; Weyer, Erica [weyer.erica@epa.gov]
**CC**: Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: Request for GEN X Material
**Attachments**: ACC comments.pdf; Damien Shea NC State.pdf; Dr. James Klaunig_Rec After Pub Com_2.pdf; Environmental Working Group.pdf; Klaunig Indiana Univ_1.pdf; Michigan Department of Environmental Quality.pdf; NRDC, Sierra Club et al.pdf; Pennsylvania Departments of Environmental Protection and Health.pdf; ToxStrategies on behalf of Chemours_DuPont-18405-1307.pdf; Toxstrategies_Rec After Pub Com_Dupont1037.pdf

**Importance**: High

Deborah and Erica,
Here is the second email with the public comments Charlotte requested.

Jamie

---

**From:** Strong, Jamie
**Sent:** Thursday, August 13, 2020 4:32 PM
**To:** Weyer, Erica <weyer.erica@epa.gov>; Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** RE: Request for GEN X Material
**Importance:** High

Deborah and Erica,
Attached please find attached documents responsive to Charlotte's request below. I will be sending multiple emails due to the size of the files. For some reason I cannot zip the files. Apologies for that.

This first email has the draft revised GenX Chemicals Assessment, the Response to Comment document, the critical study (DuPont 1037 repro/dev tox study) and the prenatal repro study (DuPont 841), the NTP PWG Dec 2019 report, and the new studies by Blake and Conley.

> -In response to the request for "summary of the higher RfD using the new study as the endpoint and the uncertainty factors used to come up with that number" we have included the health assessment itself, please have Charlotte refer to Sections 4.5 Reproductive and Developmental Studies and 7.0 Dose-Response.
>
> -In response to the request for th e" updated systematic review of the studies", please have Charlotte refer to the assessment Sections 3.3 Methods and Appendices A and B Literature Search Strategy and Systematic Review. We have also included the Response to Comments document and she should refer to Section 1.5 Literature Search and Screening there.

I will send the public comments separately.

We are still working on the comparison of other RfDs that applied a total UF of 3000.

Please let me know if you have any questions.

Thanks,
Jamie

**From:** Weyer, Erica <weyer.erica@epa.gov>
**Sent:** Wednesday, August 12, 2020 5:08 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** FW: Request for GEN X Material

Hi all,

Please send this material to Deborah and myself when you have it compiled – or let me know if you need to send in batches.

Thanks,
Erica

---

**From:** Aguirre, Janita <Aguirre.Janita@epa.gov>
**Sent:** Wednesday, August 12, 2020 4:54 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>
**Subject:** Request for GEN X Material

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g. Dr. James Klaunig, Dr. Damian Shea and Tox Strategies LLC (on behalf of Chemours)

Thank you,
Janita

---

**Janita Aguirre – Special Assistant to David Ross and Anna Wildeman**
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Phone: **(202) 566-1149** | Email: aguirre.janita@epa.gov

---

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 8/13/2020 8:32:18 PM
**To**: Weyer, Erica [weyer.erica@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]
**CC**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]
**Subject**: RE: Request for GEN X Material
**Attachments**: DuPont-18405-841.pdf; DuPont-18405-1037.pdf; DRAFT FINAL GenX Chemicals Toxicity Assessment_Tech Edit_7.27.20.docx; GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020.docx; Final EPA report Dec 4, 2019 .pdf; Blake et al 2020.pdf; Blake et al 2020_Supplement_GenXandPlacenta.pdf; Conley et al 2019 PPAR _EHP4372.pdf; Conley et al 2019 Supplemental Materials ehp4372.s001.acco.pdf

**Importance**: High

Deborah and Erica,
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This first email has the draft revised GenX Chemicals Assessment, the Response to Comment document, the critical study (DuPont 1037 repro/dev tox study) and the prenatal repro study (DuPont 841), the NTP PWG Dec 2019 report, and the new studies by Blake and Conley.

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Thanks,
Jamie

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**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
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Erica

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Thank you,
Janita

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Phone: **(202) 566-1149** | Email: aguirre.janita@epa.gov

Message

**From**: Miller, Gregory [Miller.Gregory@epa.gov]
**Sent**: 9/28/2020 7:05:09 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Draft GenX chronic HA
**Attachments**: DRAFT GenX chronic HA EPA estimate vs NC PHG_9 28 20_DO NOT CITE OR QUOTE.xlsx

In the attached you will see the affect of the uncertainty factors on the HA estimates.

Greg

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 2/10/2021 1:57:28 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: PFBS
**Attachments**: FW: PFAS Tox Values: OCSPP Review

Right that is my recollection as well. It might be hard to find a paper trail for this though. When the comments and changes were sent back by Tala, they were listed as OCSPP review (see attached).

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, February 10, 2021 8:41 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS

If I remember correctly Wheeler gave the directive to include the range in a briefing on PFBS and GenX, OPPT carried the water and provided the redlines with the range. Tala Henry is incorrect in her statement that OPPT never supported/recommended the range. They introduced those edits.

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, February 10, 2021 8:36 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS

So the question I want somebody to pursue is why, when pressed to produce politically altered risk assessments, ORD and OW resisted and even consulted with the Scientific Integrity Official. But OPPT just did whatever was asked in violation of the scientific integrity policy.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, February 10, 2021 8:23 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** PFBS

From EPA's website, "EPA career scientists have reviewed the Toxicity Assessment for PFBS, posted on January 19, 2021, and have made an initial determination that the conclusions in the assessment were compromised by political interference as well as infringement of authorship and the scientific independence of the authors' conclusions. This constitutes a violation of the agency's Scientific Integrity Policy and the documents have been removed from the EPA website while the agency completes its review."

Message

**From**: Champlin, Anna [Champlin.Anna@epa.gov]
**Sent**: 8/8/2018 3:18:08 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]
**Subject**: FW: Draft Outline for GenX rollout
**Attachments**: GenXrollout.docx

FYI. Currently PFBS isn't called out in this.

Anna Champlin
National Center for Environmental Assessment
EPA Office of Research and Development
(Desk) 202-564-8074
(Cell) 202-329-1552

---

**From:** Wadlington, Christina
**Sent:** Monday, August 06, 2018 10:04 AM
**To:** Holsinger, Hannah <Holsinger.Hannah@epa.gov>; Mattas-Curry, Lahne <Mattas-Curry.Lahne@epa.gov>; Hubbard, Carolyn <Hubbard.Carolyn@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
**Subject:** Draft Outline for GenX rollout

As a follow up to our meeting last week, provided for your review/edits. Note, I am aware there are milestones and dates that I am missing, please add as needed.

Once we have a good version, we can send to our primaries for their input but I wanted this group's edits first.

Message

**From**: Lambert, Jason [Lambert.Jason@epa.gov]
**Sent**: 8/12/2018 5:27:50 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]; Snowden, Belinda [snowden.belinda@epa.gov]
**Subject**: Re: presentation on PFBS and GenX
**Attachments**: stakeholder briefing PFBS GenX Chemicals 08 09 18_Lambert 8'12'18.pptx

Good afternoon everyone,
I added the PFBS EPR info to the slides. Let me/Beth/Samantha know if there are any questions. Take care

---

**From:** Jones, Samantha
**Sent:** Friday, August 10, 2018 10:37:01 PM
**To:** Behl, Betsy; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Flaherty, Colleen; Owens, Beth
**Cc:** Strong, Jamie; Snowden, Belinda
**Subject:** RE: presentation on PFBS and GenX

Hi all,

I can call in on the 17th. Tina is out of the country. I saw that Joe sent out the invite, so I forwarded it to Jason and Beth.

Do we have a draft of the presentation ready for review?

Thanks,
Samantha

Samantha J. Jones, PhD
NCEA Associate Director for Health
HHRA Interim Deputy National Program Director
USEPA, ORD/NCEA
(o) 202-564-6794; (m) 703-943-7990

---

**From:** Behl, Betsy
**Sent:** Friday, August 10, 2018 6:01 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Snowden, Belinda <snowden.belinda@epa.gov>
**Subject:** presentation on PFBS and GenX

I would like to get this presentation to Deborah and Peter for their review early this week and would like to get a short meeting with peter on Friday to discuss how we are going to approach it. He is out the whole week of 8/20 so the 27th is his first day back in the office and our first meeting is at 9 am.

He does seem to be free Friday afternoon (the 17th). I will ask Joe Tiago about his availability. Please let me know if you are here.

Betsy

Elizabeth (Betsy) Behl, Director

Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Message

**From**: Lambert, Jason [Lambert.Jason@epa.gov]
**Sent**: 2/22/2018 1:23:59 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Behl, Betsy [Behl.Betsy@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]
**Subject**: PFAS assessment structure outline
**Attachments**: Draft PFAS assessment document format_02 20 18 OW (002)_Final CLEAN.docx

Good morning OW team,
We appreciate the considerate coordination in getting an outline together for GenX and PFBS. Please see the attached; I imagine we would all like to call this final and move on with assembling our respective documents. Please let us know if there is anything further we need to discuss re: this outline. Thank you all

Jason C. Lambert, PhD, DABT
U.S. EPA, ORD, NCEA
26 West Martin Luther King Dr.
Cincinnati, OH 45268
(513) 569-7078 ph.
(513) 487-2539 fax
lambert.jason@epa.gov

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 2/4/2020 9:55:42 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi Guys,

I wanted to follow up about a few things from the Blake paper:

1.) Here is some text from the Blake paper about what the observed placental lesions could potentially mean/why they consider the lesions adverse:

"Placental insufficiency (PI) occurs when functional capacity of the placenta is limited or deteriorates, resulting in reduced transplacental transfer of oxygen and nutrients to the fetus (Gagnon 2003). Reduction or impairment of placental blood flow (Chaddha et al. 2004), aberrant fibrin depositions or other thrombo-occlusive damage in the placenta (Chaddha et al. 2004), and disruption of maternal-placental thyroid hormones (Belet et al. 2003) are all believed to contribute to PI pathogenesis in women. We provide evidence illustrating pathological and physiological features that are concordant with PI in our experimental mouse model. Here we show maternal exposure to PFOA or GenX induced atrophy, necrosis, and congestion of the murine placental labyrinth (suggestive of impaired transplacental transfer of nutrients and/or oxygen), aberrant formation of early fibrin clots, and disruption of placental thyroid hormones (GenX only [10 mg/kg-d]). These data are suggestive of a PI phenotype induced by maternal exposure to PFAS in mice that deserves further investigation."

2.) I was digging into the gestational weight gain data in the DuPont 1037 study and the findings are similar to the Blake paper (i.e., an increase in GWG with increasing dose). Here is the summary from DuPont 1037:

"Mean maternal body weight gains in the 0.5 and 5 mg/kg/day groups were generally higher than the control group throughout the gestation period and when the overall gestation period was evaluated (gestation days 0-18); the differences were generally statistically significant ($p<0.05$ or $p<0.01$) and attributed to test substance administration. As a result, test substance-related significantly ($p<0.01$) higher mean body weights were observed in the 0.5 and 5 mg/kg/day groups (10.5% and 12.7% higher, respectively) compared to the control group on gestation day 18."

In the Blake paper they have this to say about GWG:

"Importantly, higher GWG is associated with adverse outcomes for both mother and infant in humans, including increased risk for pregnancy-associated hypertension (with or without smaller birth weights), gestational diabetes(GD), postpartum weight retention, increased risk for unsuccessful breastfeeding, and increased risk for stillbirth, infant mortality, and preterm birth (Council 2010). These disorders share many risk factors, but it is not fully understood to what extent their etiologies are interrelated and/or interdependent (Villar et al. 2006), or what mechanisms may be driving them. Our data suggest a need for additional study of the adverse maternal and offspring health outcomes associated with GenX exposure."

Looking forward to chatting with Sue

**From:** Jacobs, Brittany
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."
    - Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis
        - Generally, these effects exhibited a dose response and got worse over the dosing period
        - Saw these effects after just 10 or 16 days of dosing
        - Sample size was pretty small (N = 5)
    - Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
        - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
    - Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
        - Constellation of lesions exhibited a dose response
        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 8/3/2020 11:13:01 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: ppt for TWG review of charge
**Attachments**: PFBS Slides for PFAS TWG_12'15'19.pptx

Probably easiest to create a similar ppt for GenX. I would start this now. Can one of you take the lead?

---

**From:** Owens, Beth <Owens.Beth@epa.gov>
**Sent:** Sunday, August 02, 2020 5:39 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: ppt for TWG review of charge

Hi Jamie-

Jason and I were both out this week. I'm weeding through emails but in case you haven't gotten it yet, I'm attaching the ppt we used when we went over the charge questions. It also had the focus on what changes were made in response to public comment since those led us to the need for another peer review and the focus of the charges. Let us know if you have questions.

Best,
Beth

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, July 29, 2020 12:24 PM
**To:** Lambert, Jason <Lambert.Jason@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** ppt for TWG review of charge

Can you guys send us the pwr pt you used at the TWG for their review of the charge? Thanks!!

Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 2/20/2020 6:49:03 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: RE: RAF-HHOC: FYI - Meeting announcement: NAS Review of EPA's TSCA Systematic Review Guidance Document (Feb 28)

I signed up. I sure hope they don't screw IRIS. I have a feeling they are going to show what we did for GenX since they were so excited when we showed them…which is kind of problematic given that we haven't put it out.

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, February 20, 2020 1:32 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** FW: RAF-HHOC: FYI - Meeting announcement: NAS Review of EPA's TSCA Systematic Review Guidance Document (Feb 28)

**From:** Flowers, Lynn <Flowers.Lynn@epa.gov>
**Sent:** Thursday, February 20, 2020 1:29 PM
**To:** Susanke, Greg <Susanke.Greg@epa.gov>; Axelrad, Daniel <Axelrad.Daniel@epa.gov>; Crimmins, Allison <Crimmins.Allison@epa.gov>; Dockins, Chris <Dockins.Chris@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>; Flowers, Lynn <Flowers.Lynn@epa.gov>; Foster, Stiven <Foster.Stiven@epa.gov>; Hodes, Colette <Hodes.Colette@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Keteles, Kristen <Keteles.Kristen@epa.gov>; Mangino, Mario <mangino.mario@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Pollard, Solomon <Pollard.Solomon@epa.gov>; Reaves, Elissa <Reaves.Elissa@epa.gov>; Firestone, Michael <Firestone.Michael@epa.gov>; Pagan-Rodriguez, Doritza <Pagan-Rodriguez.Doritza@epa.gov>; Doa, Maria <Doa.Maria@epa.gov>; Martin, Lawrence <Martin.Lawrence@epa.gov>; Broder, Michael <Broder.Michael@epa.gov>; Bussard, David <Bussard.David@epa.gov>
**Subject:** RAF-HHOC: FYI - Meeting announcement: NAS Review of EPA's TSCA Systematic Review Guidance Document (Feb 28)

Lynn Flowers, PhD, DABT
Associate Director for Science
Office of Science Advisor, Policy and Engagement
Office of Research and Development
USEPA, Washington, DC
(ph)202-564-6293, (cell)202-834-8393

**From:** NASEM Environmental Studies and Toxicology <BEST@nas.edu>
**Sent:** Thursday, February 20, 2020 10:57 AM
**To:** Flowers, Lynn <Flowers.Lynn@epa.gov>
**Subject:** Meeting announcement: Review of EPA's TSCA Systematic Review Guidance Document

View this email in your browser

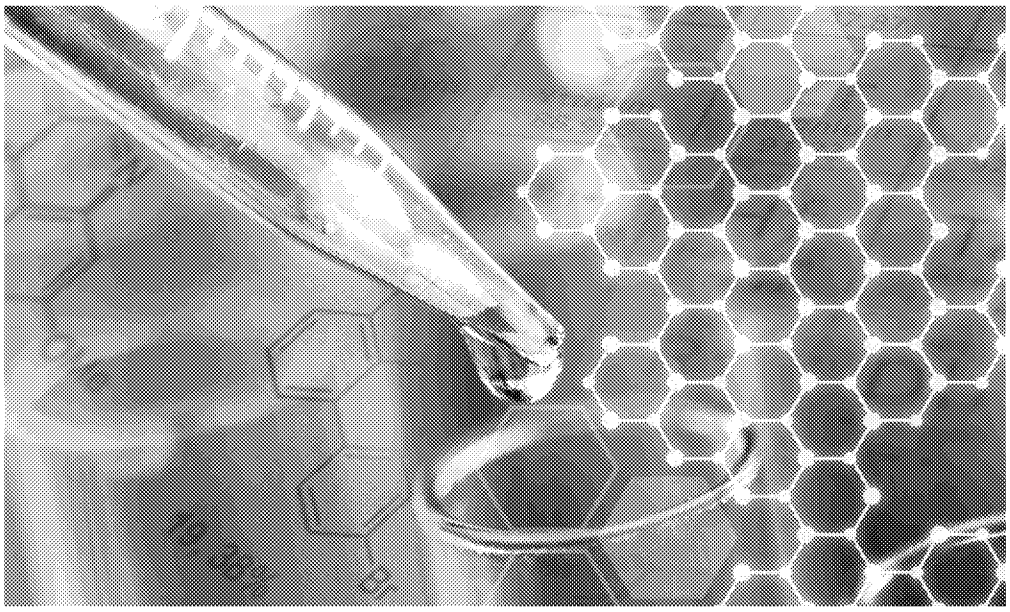
The National Academies of SCIENCES ENGINEERING MEDICINE

ENVIRONMENTAL STUDIES AND TOXICOLOGY

# *Register to Attend:*
# Review of EPA's TSCA Systematic Review Guidance Document Meeting 1

**DEADLINE: In Person - February 27, 2020 at 2:00 PM**

**Online - February 28, 12:00 PM**



The first meeting of the Committee to Review EPA's TSCA Systematic Review Guidance Document will be held on **February 28, 2020** from **9:15 AM to Noon**. Attend in-person in the Lecture Room of the NAS Building, 2101 Constitution Ave NW, Washington, DC 20418 or online. Register here if interested.

If you have any questions or comments about the study, please email EBoyle@nas.edu.

More information can be found on The Academies' Projects & Activities system website.

Register

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You are receiving this email because you opted in to emails from a unit or project in the Division on Earth & Life Studies.

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Washington, DC 20001

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Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/23/2020 2:57:42 PM
**To**: Greene, Sophie [greene.sophie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: HERA PFAS plus up research proposals
**Attachments**: PFAS Product IRIS PFAS Assessments.docx; PFAS Product PFBS Assessment.docx; PFAS Product Systematic Evidence Mapping.docx

Can one of you review this? Britt and Greg I know we are booked with GenX but maybe an hour?

---

**From:** Pollard, Amina <Pollard.Amina@epa.gov>
**Sent:** Thursday, April 23, 2020 10:45 AM
**To:** Damico, Brian <Damico.Brian@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Barash, Shari <Barash.Shari@epa.gov>; Reed, Khesha <Reed.Khesha@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Resek, Elizabeth <Resek.Elizabeth@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Brady, Catherine <brady.catherine@epa.gov>; Corona, Joel <Corona.Joel@epa.gov>; Lan, Alexis <lan.alexis@epa.gov>; Lowenstein, Zachary <lowenstein.zachary@epa.gov>; Morton, Michael <Morton.Michael@epa.gov>; Ohanian, Edward <Ohanian.Edward@epa.gov>; Reiley, Mary <Reiley.Mary@epa.gov>; Santell, Stephanie <Santell.Stephanie@epa.gov>; Smith, Bernicel <Smith.Bernicel@epa.gov>; Smith, Lameka <Smith.Lameka@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Trombley, Michael <Trombley.Michael@epa.gov>
**Subject:** HERA PFAS plus up research proposals

Hello,

ORD HERA is well underway in planning the products associated with their PFAS budget plus up. As a reminder, this plus up research is planned for the next two years and is in support of designating PFAS chemicals as hazardous substances under Section 102 of CERCLA.

There are three proposed HERA activities in two broad areas:
Health toxicity assessments for PFAS

1) Toxicity assessment for PFBS
2) Five additional IRIS PFAS assessments (PFNA, PFDA, PFBA, PFHxS, PFHxA)

Systematic evidence mapping activities for human health data for PFAS

3) Characterize human health literature with systematic evidence mapping to inform interpretation of assay data for up to 6,000 PFAS compounds

The draft HERA proposals are attached. Please let me know if you or your group have comments or concerns about any of these proposals. HERA folks are keeping the window open for comments, but they plan to stabilize the proposals in the next few days.

Thanks,
Amina

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/15/2018 11:02:42 AM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: Skype meeting for GenX Study Discussion (screen sharing)
**Location**: Skype Meeting

**Start**: 3/15/2018 1:30:00 PM
**End**: 3/15/2018 3:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Jacobs, Brittany

I've never attempted to set up a Skype meeting before, but apparently you can share your screen. In case we want to do this at 9:30, here are the directions how to share screen once you join a skype meeting. Again, I have no idea what I'm doing here.

---

→ Join Skype Meeting

Trouble Joining? Try Skype Web App

Help

---

# Share your screen or program

1. At the bottom of the conversation window, click the **Present** (monitor) button.
2. Choose one of the following:

   To share the content on your desktop, click **Present Desktop**.

   **Important:** When sharing your desktop, everyone in the meeting can see your programs, files, and notifications. If you have confidential information or files that you don't want people to see, close them or use **Present Programs** instead.

   To share one or more programs or files, click **Present Programs**, and then select the specific program or file.

3. On the sharing toolbar, on top of the screen, use any of these options:

   Click **Stop Presenting** when you are done sharing your screen.

   Click **Give Control** to share control of your desktop or program with the participants.

   Click the pin to hide the toolbar and have more space. To un-hide the toolbar, move your mouse to the top of the screen. When the sharing toolbar appears, use any of the controls you need or click the pin again to keep the toolbar visible.

**Note:** While you are presenting, your Skype for Business status changes to **Presenting** ( ⊖), and you won't receive instant messages or calls. You can change this setting in the Status options window.

If you want a meeting attendee to share their screen, give them presenter access, so they can use the controls. If they don't use Skype for Business, they can still use **Skype for Business Web App** to present.

https://support.office.com/en-us/article/Share-your-screen-in-Skype-for-Business-2d436dc9-d092-4ef1-83f1-dd9f7a7cd3fc?ui=en-US&rs=en-US&ad=US

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 3/13/2018 2:30:20 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]

**Subject**: GenX Study Discussion
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 3/15/2018 1:30:00 PM
**End**: 3/15/2018 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany; Donohue, Joyce

Joyce,
We are getting together to talk adverse effects and need your brain…no prep necessary.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 6/6/2018 2:18:39 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: GenX

**Start**: 6/6/2018 4:30:00 PM
**End**: 6/6/2018 7:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Let's touch base, I reserved a long pd of time but we can meet then break and work.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 6/1/2018 12:21:35 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: GenX
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 6/4/2018 4:30:00 PM
**End**: 6/4/2018 6:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

-walk through doc
-Talk about ORD comments
-Get comments for OPPT together to send them (need to do this ASAP)
-Major issues interagency doc to BB
-Major issues agency, need to draft responses

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 11/20/2018 6:50:06 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Benson, Amy [Benson.Amy@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Lalley, Cara [Lalley.Cara@epa.gov]
**CC**: Ross, David P [ross.davidp@epa.gov]; Penman, Crystal [Penman.Crystal@epa.gov]

**Subject**: GenX chemicals and PFBS celebration
**Location**: Occidental Grill

**Start**: 12/12/2018 9:00:00 PM
**End**: 12/12/2018 11:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Jones, Samantha; Lambert, Jason; Owens, Beth; Champlin, Anna; Bahadori, Tina; Jacobs, Brittany; Miller, Gregory; Behl, Betsy; Flaherty, Colleen; Lalley, Cara; Harper, Ashley; Drinkard, Andrea; Grevatt, Peter; Wadlington, Christina; Mattas-Curry, Lahne; Nagle, Deborah; Holsinger, Hannah; Brinkerhoff, Chris; Soares, Barbara; Benson, Amy; Burneson, Eric; Babcock, Amy; Henry, Tala; Albert, Ryan; Donohue, Joyce; Mclain, Jennifer
**Optional Attendees**: Penman, Crystal; Ross, David P

Join us to celebrate the release of the GenX and PFBS assessments!

Occidental Grill (next to the Willard)
1475 Pennsylvania, Ave., NW, Washington, DC 20004

http://www.occidentaldc.com

Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 2/6/2019 9:32:35 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]
**CC**: Bahadori, Tina [Bahadori.Tina@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]

**Subject**: finalizing GenX and PFBS
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 2/12/2019 1:30:00 PM
**End**: 2/12/2019 2:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Miller, Gregory; Jacobs, Brittany; Jones, Samantha; Lambert, Jason; Lavoie, Emma
**Optional Attendees**: Bahadori, Tina; Champlin, Anna

1. Touch base on awards for GenX and PFBS
2. Summary of public comments
3. Schedule: past and future

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/26/2018 1:06:20 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]

**Subject**: GenX Chems Public Comment Period Closes

**Start**: 1/22/2019 5:00:00 AM
**End**: 1/23/2019 5:00:00 AM
**Show Time As**: Free

**Required Attendees**: Jacobs, Brittany; Strong, Jamie

https://www.regulations.gov/docket?D=EPA-HQ-OW-2018-0614

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/3/2019 4:25:44 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]

**Subject**: options for GenX comment responses/revisions
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 4/16/2019 3:00:00 PM
**End**: 4/16/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany; Behl, Betsy

Betsy,
We need to talk to you about how to revise the document in response to comments and reanalysis of the critical endpoints.

Jamie

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/8/2019 4:36:25 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; DCRoomWest5231L/DC-CCW-OST [DCRoomWest5231L@epa.gov]

**Subject**: GenX comment triage
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 4/30/2019 5:00:00 PM
**End**: 4/30/2019 6:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory; DCRoomWest5231L/DC-CCW-OST

Talk about one pager plus for Dave Ross on slide issue.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 5/8/2019 12:25:41 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; DCRoomWest5231L/DC-CCW-OST [DCRoomWest5231L@epa.gov]

**Subject**: GenX RTC
**Attachments**: Draft GenX Assessment Resp to Public Comments jbs.docx
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 5/14/2019 2:00:00 PM
**End**: 5/14/2019 3:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany; DCRoomWest5231L/DC-CCW-OST

Go through TT summary and make assignments, polish

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 5/14/2019 3:26:50 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; DCRoomWest5231M/DC-CCW-OST [DCRoomWest5231M@epa.gov]

**Subject**: GenX Chemicals comment triage
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 5/20/2019 1:00:00 PM
**End**: 5/20/2019 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany; DCRoomWest5231M/DC-CCW-OST

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 5/16/2019 2:47:37 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; DCRoomWest5231L/DC-CCW-OST [DCRoomWest5231L@epa.gov]

**Subject**: GenX chemicals comment triage
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 5/22/2019 3:00:00 PM
**End**: 5/22/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany; DCRoomWest5231L/DC-CCW-OST

Appointment

**From**: Owscheduling [Owscheduling@epa.gov]
**Sent**: 5/13/2019 7:08:41 PM
**To**: Owscheduling [Owscheduling@epa.gov]; Forsgren, Lee [Forsgren.Lee@epa.gov]; Kramer, Jessica L. [kramer.jessical@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Neugeboren, Steven [Neugeboren.Steven@epa.gov]; Weyer, Erica [weyer.erica@epa.gov]; Penman, Crystal [Penman.Crystal@epa.gov]; Ross, David P [ross.davidp@epa.gov]; McDonough, Owen [mcdonough.owen@epa.gov]
**CC**: Flaherty, Colleen [Flaherty.Colleen@epa.gov]

**Subject**: Gen X Pathology Slides
**Attachments**: MR_DR-LF_JK_GenX Pathology Slides2019-04-24-151520.pdf
**Location**: 3233 WJCE

**Start**: 5/17/2019 2:00:00 PM
**End**: 5/17/2019 2:15:00 PM
**Show Time As**: Busy

**Required Attendees**: Forsgren, Lee; Kramer, Jessica L.; Nagle, Deborah; Behl, Betsy; Strong, Jamie; Miller, Gregory; Jacobs, Brittany; Neugeboren, Steven; Weyer, Erica; Penman, Crystal; Ross, David P; McDonough, Owen
**Optional Attendees**: Flaherty, Colleen

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 5/16/2019 6:53:54 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; DCRoomWest5231M/DC-CCW-OST [DCRoomWest5231M@epa.gov]

**Subject**: GenX Chemicals comment triage
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 5/28/2019 12:00:00 PM
**End**: 5/28/2019 1:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany; DCRoomWest5231M/DC-CCW-OST

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 6/5/2019 3:13:52 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: talk about GenX slide ?s

**Start**: 6/6/2019 12:00:00 PM
**End**: 6/6/2019 12:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 6/10/2019 12:49:30 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; DCRoomWest5231M/DC-CCW-OST [DCRoomWest5231M@epa.gov]

**Subject**: GenX comments triage
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 6/19/2019 1:00:00 PM
**End**: 6/19/2019 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory; DCRoomWest5231M/DC-CCW-OST

Appointment

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 3/4/2019 12:41:53 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Gray, Earl [Gray.Earl@epa.gov]; Conley, Justin [Conley.Justin@epa.gov]

**Subject**: Chat about PPARalpha and the GenX chemicals public comments
**Attachments**: Klaunig Indiana Univ_1.pdf; Comments - Dr. James Klaunig - 2 15 19_2.pdf; Comments - Toxstrategies - 2 15 19.pdf
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 3/20/2019 5:00:00 PM
**End**: 3/20/2019 6:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Strong, Jamie; Miller, Gregory; Soares, Barbara; Gray, Earl; Conley, Justin

3/14/19: Attaching the major comments we received on PPARalpha MOA. Looking forward to our discussion next week!

Hi Earl and Justin,

Thanks so much for being willing to chat with us about some of the public comments on the GenX chemicals assessment. I will collate the major comments we received regarding PPARalpha MOA and send that to you prior to the meeting.

Looking forward to chatting!

Join Skype Meeting

Trouble Joining? Try Skype Web App

Help

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/24/2019 11:34:20 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GenX touch base
**Location**: my office

**Start**: 9/30/2019 3:00:00 PM
**End**: 9/30/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/30/2019 4:32:27 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]

**Subject**: room reservation call with Michigan on GenX
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 9/30/2019 6:00:00 PM
**End**: 9/30/2019 7:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory; Behl, Betsy

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/30/2019 3:15:02 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: GenX Chemicals triage
**Location**: in L

**Start**: 10/2/2019 2:00:00 PM
**End**: 10/2/2019 3:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/16/2019 2:05:42 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 10/30/2019 2:00:00 PM
**End**: 10/30/2019 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/2/2019 2:31:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: talk about GenX chemicals UFs
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 10/16/2019 2:00:00 PM
**End**: 10/16/2019 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Behl, Betsy; Jacobs, Brittany; Miller, Gregory

We need to discuss the public comments on uncertainty factors and path forward.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/16/2019 2:12:57 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 10/24/2019 2:00:00 PM
**End**: 10/24/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/16/2019 2:24:42 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 11/7/2019 1:00:00 PM
**End**: 11/7/2019 3:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/16/2019 2:20:55 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 11/6/2019 3:00:00 PM
**End**: 11/6/2019 5:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/30/2019 3:15:57 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: 5231L

**Start**: 10/21/2019 12:30:00 PM
**End**: 10/21/2019 2:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/17/2019 12:11:46 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 10/23/2019 12:00:00 PM
**End**: 10/23/2019 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/3/2019 2:04:58 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; DCRoomWest5231M/DC-CCW-OST [DCRoomWest5231M@epa.gov]

**Subject**: discuss public comments on GenX chemicals
**Attachments**: ToxStrategies on behalf of Chemours.pdf; Klaunig Indiana Univ.pdf
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 4/9/2019 4:00:00 PM
**End**: 4/9/2019 5:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Behl, Betsy; Jacobs, Brittany; Miller, Gregory; Henry, Tala; DCRoomWest5231M/DC-CCW-OST

Sorry to do this over lunch, but it's the only time that appears to work for Betsy and Tala.

Attached comments pertaining to the critical endpoint and MOA.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/28/2019 2:02:53 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 11/13/2019 3:30:00 PM
**End**: 11/13/2019 5:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 11/6/2019 6:42:41 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE

**Start**: 11/14/2019 3:00:00 PM
**End**: 11/14/2019 4:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/28/2019 2:04:43 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: GENX CHEMICALS TRIAGE
**Location**: DCRoomWest5231M/DC-CCW-OST;

**Start**: 11/18/2019 2:00:00 PM
**End**: 11/18/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 11/8/2019 2:26:21 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: talk about GenX schedule

**Start**: 11/12/2019 4:00:00 PM
**End**: 11/12/2019 4:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Behl, Betsy; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 11/27/2019 1:26:05 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX TOUCH BASE
**Location**: my office/call Britt

**Start**: 12/2/2019 1:00:00 PM
**End**: 12/2/2019 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Barring arrival of baby! I thought it might be a good idea for a potentially last touch base with the three (well 4) of us!

Appointment

**From**: Owscheduling [Owscheduling@epa.gov]
**Sent**: 10/2/2019 5:07:57 PM
**To**: Owscheduling [Owscheduling@epa.gov]; Ross, David P [ross.davidp@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Bertrand, Charlotte [Bertrand.Charlotte@epa.gov]; Kramer, Jessica L. [kramer.jessical@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Aguirre, Janita [Aguirre.Janita@epa.gov]; Weyer, Erica [weyer.erica@epa.gov]
**CC**: Penman, Crystal [Penman.Crystal@epa.gov]

**Subject**: National Toxicology Program (NTP) Pathology Working Group report for GenX Chemicals
**Attachments**: MR_Ross_National Toxicology Program-Gen X2019-09-30-124406.pdf
**Location**: 3233 WJCE

**Start**: 11/19/2019 4:00:00 PM
**End**: 11/19/2019 4:45:00 PM
**Show Time As**: Busy

**Required Attendees**: Ross, David P; Nagle, Deborah; Behl, Betsy; Bertrand, Charlotte; Kramer, Jessica L.; Jacobs, Brittany; Miller, Gregory; Strong, Jamie; Aguirre, Janita; Weyer, Erica
**Optional Attendees**: Penman, Crystal

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 1/15/2020 12:43:30 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: GenX update/status check in
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 1/28/2020 1:00:00 PM
**End**: 1/28/2020 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 1/28/2020 2:38:07 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: GenX modeling discussion
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 2/4/2020 1:00:00 PM
**End**: 2/4/2020 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 2/10/2020 3:51:27 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GenX triage
**Location**: DCRoomWest5231M/DC-CCW-OST;

**Start**: 2/11/2020 1:00:00 PM
**End**: 2/11/2020 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

There are a few things we need to get into (Connelly is one)

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 2/25/2020 1:09:20 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: GenX next steps
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 2/26/2020 1:00:00 PM
**End**: 2/26/2020 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 3/10/2020 11:59:29 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: GENX
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 3/10/2020 2:30:00 PM
**End**: 3/10/2020 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 2/19/2020 4:23:08 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**CC**: Flaherty, Colleen [Flaherty.Colleen@epa.gov]

**Subject**: discuss study/effect selection
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 3/9/2020 5:30:00 PM
**End**: 3/9/2020 6:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Behl, Betsy; Jacobs, Brittany; Miller, Gregory
**Optional Attendees**: Flaherty, Colleen

Need to brief you on the outcome of the modeling and the proposed path forward for revision to the critical study/effect for the GenX chemicals assessment.

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/31/2020 2:00:36 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: Discuss Dupont 18405-1307 90 day mouse
**Attachments**: NTP PWG_Incidence Reports for liver effects_GenX chemicals_1.16.20 - NO DEAD MICE.xlsx

**Start**: 3/31/2020 2:30:00 PM
**End**: 3/31/2020 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Jacobs, Brittany

Can we use your call in #, Jamie?

Message

**From**: Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]
**Sent**: 7/8/2021 7:22:21 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: RE: Time to chat tomorrow?

Definitely, happy to talk. I'm free most of the day pretty much any time 11 – 4.
Chris

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, July 08, 2021 3:09 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** Time to chat tomorrow?

Hi Chris,

Any chance you have some time to chat about some GenX related modeling questions tomorrow? We had a peer reviewer ask some questions about the modeling we did and wanted your thoughts.

Let me know if you have time and I'll send out a meeting invite. Otherwise we can wait until you're back.

Thanks in advance,
Britt

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 7/22/2021 11:21:14 AM
**To**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: RE: GenX

OMG.

---

**From:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Sent:** Thursday, July 22, 2021 6:43 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX

…with a May 2022 deadline. Fat chance.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, July 21, 2021 6:11 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX

It's apparently in the updated PFAS action plan

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, July 21, 2021 5:40 PM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX

So lets do an HA!

---

**From:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Sent:** Wednesday, July 21, 2021 3:55 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX

https://subscriber.politicopro.com/article/eenews/2021/07/21/burden-falls-on-exposed-people-as-epa-weighs-pfas-rules-179982

Message

**From**: Allen, Ashley [Allen.Ashley@epa.gov]
**Sent**: 10/1/2021 6:37:00 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: RE: PFAS & ELGs

Hi Brittany –

Thanks so much for your response, especially given my materializing during a crunch time. I'm definitely flexible! Schedules are still being worked out, but the PFAS ELG teams just formed in September and are at least 1-2 years from the first proposed rule. The reason I've reached out to your group now is because I thought it'd be best to coordinate with your group sooner versus later as the teams work through project scoping. The wastewater discharges we'll be regulating primarily contain PFAS other than PFOA/PFOS. Given that those PFAS have not been as intensively studied as PFOA/PFOS, we'll need to address questions about the degree to which available information can support quantitative analysis of human health effects (e.g., along the lines of the quantitative benefits work for the OGWDW MCL rule). That question will be considered from multiple angles over the coming weeks/months – including policy, resource availability, and scientific – and I didn't want to delay on getting up to speed on the scientific side, including your group's perspective.

It sounds like it'd be really helpful to listen in on the PFOA/PFOS science working group meeting next Wednesday – it'd be great to attend if that works OK for you. And thank you for the helpful overview of your timelines – it sounds like the documentation of many months of work is coming soon. In the meantime, if you have suggestions of other documents to review or other EPA staff to talk with (e.g., ORD), I'd appreciate any you have to offer. For summary-type documentation, I have the final ATSDR PFAS toxicological profile, some EU reports, and materials on ORD's systematic literature review on evidence for 9000 PFAS. I have not yet reached out to ORD staff, in part because I thought it'd be helpful to first get your group's perspective on ORD's PFAS efforts given your close coordination with them.

Thank you so much for the offer to talk this morning. I'm not working today and spotted your email too late, but wanted let you know my deadlines aren't imminent. Given your time crunch and the additional background I provided above, let me know if talking soon still makes sense for you. I'd be happy to do something very targeted and brief (e.g., <15 minutes) if that would be helpful.

Thanks again and best wishes for your work over the coming weeks!
Ashley

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, October 1, 2021 4:53 AM
**To:** Allen, Ashley <Allen.Ashley@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: PFAS & ELGs

Hi Ashley,

Happy to chat. October is going to be a crazy month for us, so I'm curious what your timeline is looking like. I'm thinking it might be smart to invite you to our PFOA/PFOS science working group meeting next Wednesday. We are giving a short overview presentation on the PFAS combined toxicity framework and giving an update on the PFOA and PFOS MCLG white papers. These documents support the preliminary national primary drinking water regulation for PFOA/PFOS and will be undergoing a SAB review, which is targeted to start December. The draft documents will be made publicly available a month prior to that, so some time in November.

The GenX chemicals toxicity assessment is slated to go out later this month.

We are in crunch time getting all of these documents ready for their next step but I could do a quick call today between 9am and 12pm.

All the best,
Brittany

---

**From:** Allen, Ashley <Allen.Ashley@epa.gov>
**Sent:** Thursday, September 30, 2021 1:50 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** PFAS & ELGs

Hi Brittany & Greg –

EAD publicly announced earlier this month that it's going to develop effluent limitations and guidelines (ELG) rules for two industrial sectors known to discharge PFAS to surface waters – chemical manufacturing facilities and metal finishing facilities (chrome platers, specifically). I'll be overseeing the environmental impact analyses we do for the two rules and want to make sure our work builds upon and is well-coordinated with the ***huge*** amount of work HECD has underway. Are you available for an introductory call on your work on PFAS and human health effects? I can give you some more background on the typical scope of ELG environmental assessments and the nature of our sectors' discharges. I'd be very interested in hearing about HECD project scopes and timelines and the extent to which there's documentation available to share inside OST at this time. If there's background material (e.g., a recent briefing) you think I should read through before we talk, that would be great, too. I'll also be reaching out to Mike Elias to see if he's available for a separate call on HECD's work on PFAS and aquatic life effects.

Ashley

---

Ashley L. Allen
Biologist
U.S. Environmental Protection Agency
Office of Water – Office of Science and Technology – Engineering and Analysis Division
(202) 566-1012g

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 1/14/2021 9:48:16 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: FW: draft GenX chemicals white paper
**Attachments**: GenX Chemicals Database Uncertainty Factor White Paper_01.13.2020.docx

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**From:** Strong, Jamie
**Sent:** Thursday, January 14, 2021 4:47 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** draft GenX chemicals white paper

Betsy,
Attached is the current draft of the white paper as discussed. It is incomplete and needs some editing (abbreviation, references, tables, TOC).

Thanks,
Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From:** DAnglada, Lesley [DAnglada.Lesley@epa.gov]
**Sent:** 2/18/2021 1:26:10 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Fw: IRAC Policy Council --Update on information sharing on PFAS

FYI- the date for each session will be coming soon.

Lesley V. D'Anglada, Dr.PH, MEH
U.S. Environmental Protection Agency
Office of Science and Technology, Office of Water
1200 Pennsylvania Ave., N.W. (MC 4304T)
Washington, DC 20460
Phone: 202-566-1125

---

**From:** Dennis, Sherri <Sherri.Dennis@fda.hhs.gov>
**Sent:** Thursday, February 18, 2021 7:13 AM
**To:** McGarry, Sherri (CDC) <nmc6@cdc.gov>; Hearl, Frank J (CDC) <fjh1@cdc.gov>; Miller, David <Miller.DavidJ@epa.gov>; DAnglada, Lesley <DAnglada.Lesley@epa.gov>; Hooberman, Barry <Barry.Hooberman@fda.hhs.gov>; Foley, Steven <Steven.Foley@fda.hhs.gov>; Jon Bell (Jon.Bell@noaa.gov) <Jon.Bell@noaa.gov>; Reddy, Shanker - AMS <shanker.reddy@usda.gov>; Lindsay, James <james.lindsay@usda.gov>; Hoffmann, Sandra - ERS <sandra.hoffmann@usda.gov>; Abbott, Linda - OCE, Washington, DC <linda.abbott@usda.gov>; 'Chilcoat, Clayton D COL USARMY MEDCOM APHC (US)' <clayton.d.chilcoat.mil@mail.mil>; theresa.varner@usda.gov <theresa.varner@usda.gov>; Yang, Hong (CBER) <Hong.Yang@fda.hhs.gov>; Bowman, John (jobowman@usaid.gov) <jobowman@usaid.gov>; Doug.Farmer@nass.usda.gov <Doug.Farmer@nass.usda.gov>; Ahmed Kablan <akablan@usaid.gov>; Williams, Jodi - OSEC, Washington, DC <jodi.williams@usda.gov>; Zablotsky-Kufel, Joanna - FSIS <joanna.zablotsky-kufel@usda.gov>
**Cc:** Middleton, Karlyn <Karlyn.Middleton@fda.hhs.gov>; Hooberman, Barry <Barry.Hooberman@fda.hhs.gov>
**Subject:** IRAC Policy Council --Update on information sharing on PFAS

Dear IRAC Policy Council,
Below is an update on the planning for the information exchange/sharing on PFAS from the organizing committee.
---
A total of 17 presentations were proposed, with presenters from FDA, EPA, and USDA. We have tentatively organized the presentations into 3 sessions of approximately 2 ½ hrs each. We are aiming to hold the sessions in mid to late April, pending the presenter's availability. The list of presentations, provided below, covers a wide range of topics including overviews of research, regulatory activities, and models. We will keep you posted as the planning continues and the date for each session has been identified.

Sincerely,
The information exchange/sharing organizing committee (Karlyn Middleton, Barry Hooberman, and Sherri Dennis)

| Agency | Presenter | Presentation Title | |
|---|---|---|---|
| Session 1 | | | |
| FDA | David Goldman or Paul South | General introduction and overview of PFOS | |
| EPA | Susan Burden | A Science-Based Approach to Understanding and Managing Environmental Risk from PFAS | |
| USDA | Alexander Domesle<br>Emilio Esteban | PFAS Analytical Approaches, Surveillance Testing, and Incident Response at USDA | |

| | | | |
|---|---|---|---|
| EPA | Susan Burden | Overview talk of ORD's PFAS research | |
| USDA | Sara Lupton | ARS Research on PFAs Fate and Disposition in Cattle | |
| FDA | Lowri DeJager | Overview of FDA's work with States on PFAS analyses | |
| | | Session 2 | |
| FDA | Susan Genualdi | Methods for the analysis of PFAS in foods | |
| EPA | Hannah Holsinger | EPA's Regulatory Determination and Drinking Water Rule Development Process | |
| FDA | Barry Hooberman | Approaches to determining interim screening levels for PFAS in animal feed | |
| EPA | Dustin Kapraun and Paul Schlosser | Model template approach for rapid evaluation of physiologically based pharmacokinetic models for use in human health risk assessments (note that this approach was applied to PFAS risk assessments)) | |
| FDA | Ian Edhlund | PBPK models for PFAS to support the determination of interim screening levels in animal feed | |
| EPA | Elain Cohen-Hubal | Human exposure pathways to poly- and perfluoroalkyl substances (PFAS) from indoor media: A systematic review protocol | |
| | | **Session 3** | |
| EPA | Cavin Ward-Caviness | Using electronic health records in North Carolina to examine the impacts of PFAS on clinical outcomes | |
| EPA | Justin Conley | Dose additive developmental toxicity of a mixture of three PFAS (HFPO-DA, NBP2, PFOS) in the Sprague-Dawley rat | |
| EPA | Justin Conley | Characterization of developmental toxicity and Adverse Outcome Pathways (AOPs) for emerging PFAS – individual compounds and mixtures | |
| FDA | Shruti Kabadi | Characterizing biopersistence potential of the metabolite 5:3 fluorotelomer carboxylic acid upon repeated oral exposure to the parent compound 6:2 fluorotelomer alcohol | |
| FDA | Penelope Rice | Comparative analysis of the potential human health effects of 6:2 fluorotelomer alcohol (6:2 FTOH) versus perfluorohexanoic acid (PFHxA) | |

**From:** Dennis, Sherri
**Sent:** Monday, January 25, 2021 2:00 PM
**To:** McGarry, Sherri (CDC) <nmc6@cdc.gov>; Hearl, Frank J (CDC) <fjh1@cdc.gov>; 'David Miller' <miller.davidj@epa.gov>; Lesley D'Anglada (DAnglada.Lesley@epa.gov) <DAnglada.Lesley@epa.gov>; Hooberman, Barry <Barry.Hooberman@fda.hhs.gov>; Foley, Steven <Steven.Foley@fda.hhs.gov>; Jon Bell (Jon.Bell@noaa.gov) <Jon.Bell@noaa.gov>; Reddy, Shanker - AMS <shanker.reddy@usda.gov>; Lindsay, James <james.lindsay@usda.gov>; Hoffmann, Sandra - ERS <sandra.hoffmann@usda.gov>; Abbott, Linda - OCE, Washington, DC <linda.abbott@usda.gov>; 'Chilcoat, Clayton D COL USARMY MEDCOM APHC (US)' <clayton.d.chilcoat.mil@mail.mil>; theresa.varner@usda.gov; Yang, Hong (CBER) <Hong.Yang@fda.hhs.gov>; Bowman, John (jobowman@usaid.gov) <jobowman@usaid.gov>; Doug.Farmer@nass.usda.gov; Ahmed Kablan <akablan@usaid.gov>; Williams, Jodi - OSEC, Washington, DC <jodi.williams@usda.gov>
**Cc:** Middleton, Karlyn (Karlyn.Middleton@fda.hhs.gov) <Karlyn.Middleton@fda.hhs.gov>; Zablotsky-Kufel, Joanna - FSIS <Joanna.Zablotsky-Kufel@fsis.usda.gov>
**Subject:** IRAC Policy Council --Update on proposed information sharing on PFAS

Dear Policy Council,
As proposed at our Fall Policy Council meeting, we have solicited interest for presentations on agency research and activities (completed, ongoing or planned) on PFAS to share. Below in no particular order are the submissions we received as of last week. Before we begin to schedule the information sharing sessions (which we expect to be several ½

day sessions), we wanted to check in to see if there were any other presentations to include in the sessions. Please let us know by COB Jan 29th if any additional interest.
Thank you
The PFAS Information Sharing Organizing Committee – Sherri, Karlyn and Barry
---
Speakers and presentations (this is just the list, in no particular order for now)

| Agency | Presenter | Presentation Title |
|---|---|---|
| USDA-ARS | Sara Lupton | ARS Research on PFAs Fate and Disposition in Cattle |
| FDA-CFSAN | Penelope Rice | Comparative analysis of the potential human health effects of 6:2 fluorotelomer alcohol (6:2 FTOH) versus perfluorohexanoic acid (PFHxA) |
| FDA-CFSAN | Shruti Kabadi | Characterizing biopersistence potential of the metabolite 5:3 fluorotelomer carboxylic acid upon repeated oral exposure to the parent compound 6:2 fluorotelomer alcohol |
| FDA-CFSAN | Lowri DeJager | Overview of FDA's work with States on PFAS analyses |
| FDA-CFSAN | Susan Genualdi | Methods for the analysis of PFAS in foods |
| FDA-CVM | Barry Hooberman | Approaches to determining levels of concern for PFAS in animal feed |
| FDA-CVM | Ian Edhlund | PBPK models for PFAS to support the determination of levels of concern in animal feed |
| USDA-FSIS | Alexander Domesle<br>Emilio Esteban | PFAS Analytical Approaches, Surveillance Testing, and Incident Response at USDA |

**From:** Dennis, Sherri
**Sent:** Monday, December 7, 2020 8:34 AM
**To:** McGarry, Sherri (CDC) <nmc6@cdc.gov>; Hearl, Frank J (CDC) <fjh1@cdc.gov>; 'David Miller' <miller.davidj@epa.gov>; Lesley D'Anglada (DAnglada.Lesley@epa.gov) <DAnglada.Lesley@epa.gov>; Hooberman, Barry <Barry.Hooberman@fda.hhs.gov>; Foley, Steven <Steven.Foley@fda.hhs.gov>; Hall, Robert H (NIH) <RHall@niaid.nih.gov>; Jon Bell (Jon.Bell@noaa.gov) <Jon.Bell@noaa.gov>; Reddy, Shanker - AMS <shanker.reddy@usda.gov>; Lindsay, James <james.lindsay@usda.gov>; Hoffmann, Sandra - ERS <sandra.hoffmann@usda.gov>; Abbott, Linda - OCE, Washington, DC <linda.abbott@usda.gov>; 'Chilcoat, Clayton D COL USARMY MEDCOM APHC (US)' <clayton.d.chilcoat.mil@mail.mil>; theresa.varner@usda.gov; Yang, Hong (CBER) <Hong.Yang@fda.hhs.gov>; Bowman, John (jobowman@usaid.gov) <jobowman@usaid.gov>; Doug.Farmer@nass.usda.gov; Ahmed Kablan <akablan@usaid.gov>; Williams, Jodi - OSEC, Washington, DC <jodi.williams@usda.gov>
**Cc:** Middleton, Karlyn (Karlyn.Middleton@fda.hhs.gov) <Karlyn.Middleton@fda.hhs.gov>; Zablotsky-Kufel, Joanna - FSIS <Joanna.Zablotsky-Kufel@fsis.usda.gov>
**Subject:** IRAC Policy Council Fall meeting - draft meeting minutes for review and comment due Dec 14th and announcement of opportunity for information sharing on PFAS

Dear Policy Council members,
Many thanks to those who were able to attend and participate in our Fall meeting last week. The draft meeting minutes are attached for your review and comment by **December 14th**.

During the meeting there was a suggestion (thank you Barry!) to share information about Per and Polyfluoroalkyl Substances (PFAS) activities among IRAC member agencies. A number of agencies are conducting research and other activities to better understand the risks associated with human and animal exposure. We are pleased to announce an opportunity to present/attend information sharing session(s) for IRAC member agencies (open to federal government employees only). Depending on the number of proposed presentations, we envision one or more half-day sessions for IRAC member agencies to present on their

completed, ongoing and/or planned work on PFAS. We anticipate holding the interagency information session(s) in late January or early February 2021. Please let us know **by December 21st** if your agency is interested in presenting at this information sharing event.

Thank you and let us know if any questions.
Sherri, Karlyn, and Joanna

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/17/2021 8:25:32 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020" with you.

It's on the sharepoint site. If its too slow, i can onedrive it like we used to.

This link only works for the direct recipients of this message.

GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020

Open

Microsoft OneDrive

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/25/2021 1:51:12 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: GENX : FW: Issue papers
**Attachments**: GenX 1.25.21.docx

FYI

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Friday, June 25, 2021 9:48 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Jamie Strong <jamiebstrong@hotmail.com>
**Subject:** FW: Issue papers

FYI...

---

**From:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Sent:** Monday, January 25, 2021 3:05 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Weyer, Erica <weyer.erica@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Issue papers

Thanks, Deborah. Revised GenX paper attached. We omitted the reference to OMB review -- our health assessments do not typically undergo official OMB review.

---

**From:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Sent:** Monday, January 25, 2021 2:21 PM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Huff, Lisa <Huff.Lisa@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>; Reed, Khesha <Reed.Khesha@epa.gov>
**Subject:** RE: Issue papers

Colleen,

Attached are my comments/edits on the GenX issue paper. Mainly, I was aligning the process moving forward based on the fact that the TWG is not reviewing now (so I disconnected it from PBFS). Make any edits you think are appropriate.

Thanks

Deborah

---

**From:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Sent:** Thursday, January 21, 2021 5:15 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Huff, Lisa <Huff.Lisa@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>; Reed, Khesha <Reed.Khesha@epa.gov>; Teachey, Morgan <Teachey.Morgan@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** Issue papers

Deborah, please see the attached issue papers. Copying EAD and SHPD because they contributed to the PFAS paper.

Thanks,
Colleen

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/8/2021 7:53:52 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: ntp data - deaths excluded
**Attachments**: NTP PWG_Incidence Reports for liver effects_GenX chemicals_1.16.20 - DEATHS EXCLUDED.xlsx; DRAFT REVISED NTP liver effects_GenX 184051037 _ NO DEAD MICE.xlsx

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/8/2021 7:56:32 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: cphea modeling
**Attachments**: CPHEA GenX BMDS Modeling Support Req3 Report v4 as transmitted.docx

also going to give you access to a folder with spreadsheets

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/13/2021 2:32:58 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: GenX Briefing Materials: GenX Chemicals DRAFT Toxicity Assessment Briefing - Update on revisions based on public comment and kick-off for internal review
**Attachments**: GenX Chems Slides for Agency Review_March 2021 v2 WITH NOTES.pptx

Here's what we used for the IntraAgency review. I presume it will need updating based on the Peer Review changes.

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/13/2021 5:15:39 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Got clarification: URGENT: GenX one-pager?
**Attachments**: OW Briefing Memo GenX Chemicals Assessment_4.9.21 version 1 draft.docx

This was the transition briefing memo we prepared.

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Tuesday, July 13, 2021 1:14 PM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Got clarification: URGENT: GenX one-pager?

OK *just OST GenX work*. That helps.

Do you have a press release or exec summary from the last draft that we can use as starting material? I'm happy to take a stab at updating and then share with you.

Thanks,
Sue

---

**From:** Weyer, Erica <weyer.erica@epa.gov>
**Sent:** Tuesday, July 13, 2021 1:10 PM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** RE: URGENT: GenX one-pager?

Just what we're going on GenX within OST.

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Tuesday, July 13, 2021 1:08 PM
**To:** Weyer, Erica <weyer.erica@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** RE: URGENT: GenX one-pager?

Hi Erica,

Could you clarify the *purpose and scope* of this request into Teams? I had been assuming that you were looking for a one pager on the GenX Toxicity Assessment being conducted at OST. Is that not the case?

Meanwhile, I have asked around about existing one pagers.

Thanks so much,
Sue

**From:** Weyer, Erica <weyer.erica@epa.gov>
**Sent:** Tuesday, July 13, 2021 12:41 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Subject:** URGENT: GenX one-pager?
**Importance:** High

All,

Hate to send this one your way, in light of the conversation during your biweekly. Our deadline to OW is 3pm, so please send to Deborah when you can before that (and cc me).

Erica

---

**From:** Aguirre, Janita <Aguirre.Janita@epa.gov>
**Sent:** Tuesday, July 13, 2021 11:55 AM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>
**Cc:** Skane, Elizabeth <Skane.Elizabeth@epa.gov>
**Subject:** GenX one-pager?
**Importance:** High

Hi Deborah and Erica,

Are you aware of any existing one-pagers/fact sheets on GenX? No need to create anything new, but will gladly take any existing items on GenX and our actions/research to date. If I should ask another office, please let me know. (timeline is today, 3:00pm if you have anything)

Thank you,
Janita
**Janita Aguirre – Chief of Staff**
U.S. Environmental Protection Agency | Office of Water
Phone: **(202) 566-1149** | Email: aguirre.janita@epa.gov

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/13/2021 1:01:49 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: PFAS Toxicity Discussion - States
**Attachments**: PFAS Toxicity Discussion - States

We certainly referred to this meeting as the ECOS meeting, but I see Alan Roberson from ASDWA on the meeting invitation.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/19/2020 5:50:13 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: meeting with ORD on GenX

I say move it. Regardless of whether we can take the meeting without you, the ORD UFd discussion might be irrelevant depending on what Charlotte says. Or maybe we'd want to talk about Charlotte's comments with ORD.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, October 19, 2020 1:47 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** meeting with ORD on GenX

The meeting with Charlotte got moved to Wednesday 10-11. Do you think I need to ask ORD to move or can you two handle it until I can get there?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/14/2021 12:26:10 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: RE: GenX slides
**Attachments**: GenX Chems Slides for Agency Review_Sept 2021_blj gMiller.pptx

A few minor clarifications.

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

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**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Tuesday, September 14, 2021 8:17 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX slides

Greg,

Will you be commenting as well or are you good?

Thanks,
Sue

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, September 14, 2021 3:27 AM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX slides

Hi Sue,

Thanks so much for getting these together. My comments and edits attached. I tried to track most of my changes in comment bubbles. I don't think we should include a slide comparing the RfD to other PFAS, but I think it would be helpful to have a slide that compares the RfDs from the draft to the RfDs in the final.

Let me know if you have any questions about my comments/edits.

Britt

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Monday, September 13, 2021 10:45 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>

**Subject:** GenX slides
**Importance:** High

Hi Brittany and Greg,

Attached are draft slides. I framed these slides on the steps since the Agency reviewers have last seen the document – so from the 2nd peer review. I did retain some history about the NTP PWG because that is so significant.

The basic intro slides are included for the briefings to states and regions. Brittany, Betsy, and I discussed last Friday is making one set of slides that can be recycled for the briefings to states and regions. Alternatively, you can choose to leave this out for the Agency reviewer briefing.

I have questions for you in yellow highlight on Slides 9 and 13. I also wondered whether it would be worth adding a slide comparing the RfD to other PFAS – but opted not to include it to keep it focused on GenX. If you do want the comparison, I updated the comparison table in the Technical Fact Sheet (on SP).

We will need Betsy's review of the slides. If you could review and revise by noon or 1pm tomorrow then I could move them on to Betsy for her review.

Thanks,
Sue

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/14/2021 12:57:55 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: GenX slides from the last time we briefed Agency Reviewers
**Attachments**: GenX Chems Slides for Agency Review_March 2021 v2.pptx

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Friday, March 19, 2021 8:31 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: draft GenX agency review email

Thanks for the edits, Betsy. Here are the updated slides for the meeting on 3/25. I'll post them to the meeting invitation next week.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, March 17, 2021 4:18 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: draft GenX agency review email

Overall you nailed it. Some slides are a bit wordy, so I suggested some changes.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, March 17, 2021 1:07 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: draft GenX agency review email

I'll work on scheduling next. In the meantime, please review these slides compiled from our August 2020 Dave Ross briefing and modeled on the PFBS agency review presentation. I was aiming to keep things short and to the point. Let me know if you have any edits or comments.

Greg

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Tuesday, March 16, 2021 5:13 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: draft GenX agency review email

Based on your subsequent email, should it say that we will begin a review shortly (in a week and a half) and they can expect an invite to a presentation providing a brief overview of what has changed since the draft they saw prior to initiation of public comment (in 2018/9?). The date should be 4 weeks later.

Does that make sense?

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, March 16, 2021 2:01 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** draft GenX agency review email

Hi Betsy,
Can you take a quick look at this email that will announce the agency review for GenX. It uses the same words that PFBS used.

---
Hello all,

You are receiving this email because you have been identified as your office's point of contact for review of toxicity assessments in general and/or as the PFAS point of contact. If this has reached you by mistake and there is another individual that should be the point person, please let me know as soon as you can.

This email is to initiate the internal agency review of the revised GenX Chemicals toxicity assessment. Shortly, you will be granted access to the SharePoint site (see link below) so that you will be able to obtain the GenX Chemicals draft toxicity assessment as well as the Response to Public Comments document. Please feel free to circulate the materials within your respective office, we just ask that as the points of contact, that you compile and upload one set of comments from your respective office. We request that you post comments to the SharePoint site by **COB Friday, April 9th**.

PROVIDE SHAREPOINT LINK HERE

We appreciate your feedback. Please let me know if there are any questions.

Thank you!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/1/2021 7:59:04 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: FOR YOUR REVIEW-Response to Comments GenX Chemicals
**Attachments**: Draft GenX Assessment Resp to Public Comments 05 06 2020bb.docx; Draft GenX Assessment Resp to Public Comments 05 06 2020bb.docx

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Tuesday, June 9, 2020 11:33 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>; Reiley, Mary <Reiley.Mary@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Response to Comments GenX Chemicals

You all did a fantastic job on this. I made some suggestions for lumping and some other suggestions. Let me know if you want to discuss.

b

---

**From:** Behl, Betsy
**Sent:** Monday, June 01, 2020 5:47 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>; Reiley, Mary <Reiley.Mary@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Response to Comments GenX Chemicals

Very nice job. I will review the schedule next and then the response to comments.
Please let me know if you have questions about my comments. You did a great job summarizing a lot of complicated and detailed science and justifying the UFs.

I had suggestions about terminology for the Thompson and NTP re-analyses. See what you think. I found the use of the word "some" a little vague. Made edits for your consideration. I made a few statements a bit bolder than they were. Let me know if I overstated. Overall, limited changes to this good document.

Thanks!

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, May 07, 2020 1:28 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>; Reiley, Mary <Reiley.Mary@epa.gov>
**Subject:** FOR YOUR REVIEW-Response to Comments GenX Chemicals
**Importance:** High

Betsy,

Attached is the response to comments document for GenX chemicals. We followed the model used in the cyano rec criteria, summarizing major comments (calling out commenters) and providing a response. We still need TT to fix the TOC and check comment numbering, etc. They will do a full tech edit after your review. We also have a few comments that need OPPT and OLEM to weigh in (I previously requested help here, OPPT provided some responses but many were not responsive and OLEM never responded [I think...you may have reached out to Kathy R for me, I cant remember]). Many thanks to Greg, Casey and Brittany. Please let us know if you have any questions or would like the actual comments (I can share the folder on SharePoint).

Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/22/2020 3:13:35 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "GenX comments_ALowit" with you.

Same deal as before. Make comment responses in this shared version.

This link only works for the direct recipients of this message.

GenX comments_ALowit

Open

Microsoft OneDrive

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/30/2021 5:29:32 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: agenda items for Bi-Weekly/w Deborah
**Attachments**: AGENDA biweekly OD 10--05-2021 092921.docx

Just a heads up. GenX outreach is on the agenda for Deborah next week. You probably won't get called in.

**From:** Snowden, Belinda <snowden.belinda@epa.gov>
**Sent:** Thursday, September 30, 2021 1:14 PM
**To:** Gallagher, Kathryn <Gallagher.Kathryn@epa.gov>; Thomas, Dana <Thomas.Dana@epa.gov>; Resek, Elizabeth <Resek.Elizabeth@epa.gov>; Pollard, Amina <Pollard.Amina@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; DAnglada, Lesley <DAnglada.Lesley@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** agenda items for Bi-Weekly/w Deborah

Attached is the draft agenda for the bi-weekly on 10/5. Please feel free to add items to the agenda attached agenda or you send them to me.

Thanks

**Belinda Snowden**
**SEE Scheduler for Betsy Behl**
**US EPA**
**OW/OST/HECD**
**WJC-West 5233J**
**(202) 566-2146 Office**
Snowden.belinda@epa.gov

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/12/2021 12:17:37 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: oeca genx meeting

Forward that oeca genx meeting to me too. 4pm on 10/19.

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

Message

**From:** Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 10/21/2021 12:03:48 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject:** Miller, GregoryG shared "Final Toxicity Assessment for GenX chems--public outreach 101921" with you.

# Miller, GregoryG shared a file with you

any other edits?

Final Toxicity Assessment for GenX chems--public outreach 101921

This link only works for the direct recipients of this message.

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Microsoft

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Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/21/2021 1:46:13 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: GenX is not always a better fluorinated organic compound than PFOA: A critical review on aqueous phase treatability by adsorption and its associated cost
**Attachments**: Heidari et al_2021_GenX not always better than PFOA-review_WatRes.pdf

---

**From:** Ravenscroft, John <Ravenscroft.John@epa.gov>
**Sent:** Thursday, October 21, 2021 9:31 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Subject:** FW: GenX is not always a better fluorinated organic compound than PFOA: A critical review on aqueous phase treatability by adsorption and its associated cost

Good morning Greg and Sue,

Sharing a paper of potential interest. Please see attached.

--John

---

**Feed:** ScienceDirect Publication: Water Research
**Posted on:** Thursday, September 23, 2021 5:34 AM
**Author:** ScienceDirect Publication: Water Research
**Subject:** GenX is not always a better fluorinated organic compound than PFOA: A critical review on aqueous phase treatability by adsorption and its associated cost

Publication date: Available online 23 September 2021

**Source:** Water Research

Author(s): Hamed Heidari, Tauqeer Abbas, Yong Sik Ok, Daniel C.W. Tsang, Amit Bhatnagar, Eakalak Khan

View article...

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/25/2021 10:53:53 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: genx documents

Yay!!!

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, October 22, 2021 8:36 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** FW: genx documents
**Importance:** High

For your records ☺ Kind of can't believe it's done

---

**From:** Jacobs, Brittany
**Sent:** Friday, October 22, 2021 6:08 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>
**Subject:** RE: genx documents
**Importance:** High

Good morning everyone,

Here are all of the final GenX docs in one place. Woohoo!

Britt

---

**From:** Jacobs, Brittany
**Sent:** Thursday, October 21, 2021 3:03 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Euling, Susan <Euling.Susan@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** RE: genx documents

Yeah sure, I'm trying to update the acknowledgements in the final assessment right now. I realized we didn't update that from draft to final and we got additional modeling support from ORD in the interim. I asked that Tetra Tech get that back to me tomorrow by noon at the latest. Okay to send then?

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Thursday, October 21, 2021 2:35 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Euling, Susan <Euling.Susan@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** genx documents

Brittany, could you send us all the documents that are to be posted on Monday? I d like to have the finals

thx

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/27/2021 11:37:20 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: genx documents

When you have time (hahaha), can you send me the final word doc version of the tox assessment too?

Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, October 22, 2021 8:36 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** FW: genx documents
**Importance:** High

For your records ☺ Kind of can't believe it's done

---

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**Sent:** Friday, October 22, 2021 6:08 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>
**Subject:** RE: genx documents
**Importance:** High

Good morning everyone,

Here are all of the final GenX docs in one place. Woohoo!

Britt

---

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**Sent:** Thursday, October 21, 2021 3:03 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Euling, Susan <Euling.Susan@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** RE: genx documents

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---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Thursday, October 21, 2021 2:35 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Euling, Susan <Euling.Susan@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** genx documents

Brittany, could you send us all the documents that are to be posted on Monday? I d like to have the finals

thx

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/1/2021 7:07:59 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: New GenX paper

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

---

**From:** Blake, Bevin <Blake.Bevin@epa.gov>
**Sent:** Monday, November 1, 2021 2:39 PM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: New GenX paper

Thank you!

---

**From:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Sent:** Monday, November 1, 2021 2:38 PM
**To:** Blake, Bevin <Blake.Bevin@epa.gov>
**Subject:** RE: New GenX paper

I'll be sure to pass it along then! Great work!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

---

**From:** Blake, Bevin <Blake.Bevin@epa.gov>
**Sent:** Monday, November 1, 2021 2:38 PM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: New GenX paper

No problem! I think Brittany may have gotten a copy at an earlier point in time but I'm not 100% certain.

**From:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Sent:** Monday, November 1, 2021 2:28 PM
**To:** Blake, Bevin <Blake.Bevin@epa.gov>
**Subject:** RE: New GenX paper

This is great! Thanks for sharing it Bevin. We are doing most of the stakeholder outreach for GenX this week. I think you've also shared this with Brittany Jacobs right? If not, I'll pass it along.

Thanks again!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

---

**From:** Blake, Bevin <Blake.Bevin@epa.gov>
**Sent:** Monday, November 1, 2021 9:34 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** New GenX paper

Hi Greg,

My name is Bevin and I am currently a postdoc in CPAD. My former lab group just published a new study on *in utero* exposure to GenX and offspring metabolic health. My branch chief mentioned that you might be interested in giving it a look since you led the GenX assessment. It's a shame we weren't able to get this in print more quickly, but better late than never!

https://www.sciencedirect.com/science/article/pii/S2405665021000202

Cheers,

Bevin Blake, Ph.D.
Chemical & Pollutant Assessment Division
Center for Public Health & Environmental Assessment
Office of Research & Development
U.S. Environmental Protection Agency
she/her/hers

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/20/2019 3:57:54 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: revised GenX briefing - 5/17/19

yes

---

**From:** Strong, Jamie
**Sent:** Monday, May 20, 2019 11:57 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

Does this include Britts edit?

---

**From:** Miller, Gregory
**Sent:** Monday, May 20, 2019 11:37 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

Found a couple of small problems when reading through with "no markup" on. Corrections attached. I'm good to go.

---

**From:** Jacobs, Brittany
**Sent:** Monday, May 20, 2019 11:23 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

I had one edit. I think it is important to say that ToxStrategies re-assessed liver slides from the original DuPont studies. Hopefully this is just a fact.

---

**From:** Strong, Jamie
**Sent:** Monday, May 20, 2019 11:13 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

Let me know so I can send to Colleen.

---

**From:** Strong, Jamie
**Sent:** Monday, May 20, 2019 8:35 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

Here are my edits on top of yours.

---

**From:** Miller, Gregory
**Sent:** Friday, May 17, 2019 11:28 AM

**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** revised GenX briefing - 5/17/19

Here are some edits to consider.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/20/2019 3:37:25 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: revised GenX briefing - 5/17/19
**Attachments**: post-briefing revision_ Options for the GenX Chemicals Assessment 052019_blj gMiller.docx

Found a couple of small problems when reading through with "no markup" on. Corrections attached. I'm good to go.

---

**From:** Jacobs, Brittany
**Sent:** Monday, May 20, 2019 11:23 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

I had one edit. I think it is important to say that ToxStrategies re-assessed liver slides from the original DuPont studies. Hopefully this is just a fact.

---

**From:** Strong, Jamie
**Sent:** Monday, May 20, 2019 11:13 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

Let me know so I can send to Colleen.

---

**From:** Strong, Jamie
**Sent:** Monday, May 20, 2019 8:35 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** RE: revised GenX briefing - 5/17/19

Here are my edits on top of yours.

---

**From:** Miller, Gregory
**Sent:** Friday, May 17, 2019 11:28 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** revised GenX briefing - 5/17/19

Here are some edits to consider.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/28/2019 11:50:58 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; DCRoomWest5231M/DC-CCW-OST [DCRoomWest5231M@epa.gov]
**Subject**: RE: GenX Chemicals comment triage

Brittany isn't in yet. So I guess delay or postpone.

---

**From:** Strong, Jamie
**Sent:** Tuesday, May 28, 2019 7:49 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; DCRoomWest5231M/DC-CCW-OST <DCRoomWest5231M@epa.gov>
**Subject:** RE: GenX Chemicals comment triage

Let's chat briefly. I just got here (traffic was a nightmare). Maybe postpone?

-----Original Appointment-----
**From:** Strong, Jamie
**Sent:** Thursday, May 16, 2019 2:54 PM
**To:** Strong, Jamie; Miller, Gregory; Jacobs, Brittany; DCRoomWest5231M/DC-CCW-OST
**Subject:** GenX Chemicals comment triage
**When:** Tuesday, May 28, 2019 8:00 AM-9:30 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/29/2019 2:39:01 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: GenX Crosswalk file w/ commenter names

Ok good. Let's add a statement explaining this in the Introduction.

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, May 29, 2019 10:37 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX Crosswalk file w/ commenter names

I believe these are all the comments that are PFBS specific…I know for sure 3M and MN DOH only commented on PFBS

---

**From:** Miller, Gregory
**Sent:** Wednesday, May 29, 2019 10:31 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX Crosswalk file w/ commenter names

Hopefully this is helpful. While I was doing this, I noticed that the following comment sets aren't cited as being part of any comment summaries. Not sure it's a problem, but thought I should flag it for future discussion.

-0021 Bruce Allen, Independent Consultant to 3M Company
-0039 Dr. Wendy Heiger-Bernays, Boston University School of Public Health
-0028 Paul Lutton
-0033 Massachusetts Department of Environmental Protection
-0019 Minnesota Department of Health

---

**From:** Strong, Jamie
**Sent:** Tuesday, April 16, 2019 11:18 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: TD for TT

---

**From:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Sent:** Tuesday, April 16, 2019 8:13 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** John Hochheimer <john.hochheimer@tetratech.com>
**Subject:** RE: TD for TT

Jamie and Shamima,

Attached is the crosswalk file that shows the comment letter identifiers associated with each comment. I also reattached the draft comments summary document from yesterday. Please let us know if you have any questions.

Thank you,

Sue

---

**From:** Lanberg, Susan
**Sent:** Monday, April 15, 2019 2:53 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Hochheimer, John <John.Hochheimer@tetratech.com>
**Subject:** RE: TD for TT

Jamie and Shamima,

Attached please find a draft version of the comment summaries for the Response to Comment Document for GenX Chemicals Assessment for your review. We didn't identify any substantive categories/topics in addition to the categories/topics listed on EPA's outline.

We did identify a "1.3.1 Limited Data Uncertainty" subcategory under the "1.3 Uncertainty Factors" category that includes the more detailed comments on uncertainty in the analyses. We also identified some relatively minor categories of "2.3 Implementation Tools," "3.1 General Support," and "4.1 Request for Extension." If you think it is better to move the comments from the additional categories to an existing section category from EPA's outline, that would be fine with us as well. We could also group some of the summarized comments together further after you've had a chance to review them.

We're in the process of finalizing the crosswalk showing the comment letter identifiers associated with each comment. We'll make sure to send the crosswalk to you by later today or tomorrow.

Please let us know if you have any comments or questions.

Thank you,

Sue

**Susan Adair Lanberg** | Environmental Scientist
Direct: (703) 385-1906, (703) 385-6000 ext 1906 | Fax: (703)385-6007
susan.lanberg@tetratech.com

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---

**From:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Sent:** Monday, April 01, 2019 10:04 AM
**To:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: TD for TT

Hi Sue, Please see the responses below.

Thanks,
Shamima

**From:** Strong, Jamie
**Sent:** Monday, April 1, 2019 9:55 AM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Subject:** FW: TD for TT

- By when you would want us to develop a draft Response to Comment Document for GenX Chemicals Assessment for your review?
    - EPA asks that the summary document is completed in 2 weeks.
- We noticed that there are some comments related to the Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate Assessment available in the docket. Should we plan on developing a separate Response to Comment document for this assessment as well, or just develop one for GenX at this time?
    - No, EPA does not need a summary of public comments document for PFBS at this time, just develop a summary of public comments document for the GenX chemicals assessment.
- Also, it looks like this TD could be categorized under several existing subtasks under WA 4-15, Task 3. Please let us know if we should use the HH-AWQC Development subtask or the PFAS Document Technical Editing subtask for this TD.
    - Yes under the PFAS tech edit subtask.

**From:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Sent:** Wednesday, March 27, 2019 5:00 PM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** John Hochheimer <john.hochheimer@tetratech.com>
**Subject:** RE: TD for TT

Hi Shamima and Jamie,

We have a few initial questions below.

- By when you would want us to develop a draft Response to Comment Document for GenX Chemicals Assessment for your review?
- We noticed that there are some comments related to the Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate Assessment available in the docket. Should we plan on developing a separate Response to Comment document for this assessment as well, or just develop one for GenX at this time?
- Also, it looks like this TD could be categorized under several existing subtasks under WA 4-15, Task 3. Please let us know if we should use the HH-AWQC Development subtask or the PFAS Document Technical Editing subtask for this TD.

Thank you,

Sue

**From:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Sent:** Wednesday, March 27, 2019 3:34 PM
**To:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: TD for TT

Hi Sue, Please see the technical directions below from Jamie and let us now if you have any questions.

Thanks,
Shamima

TDs:
EPA is requesting that TT develop the Response to Comment Document for GenX Chemicals Assessment. Specifically, TT shall review all public comments (available at https://www.regulations.gov, docket EPA-HQ-OW-2018-0614) and summarize these comments based on the categories/topics presented in the attached outline. Attached is an outline with the major topic areas identified in the public comments and the two comments we received after the docket closed. TT shall also identify, and summarize upon approval by EPA, substantive categories/topics in addition to the categories/topics listed on EPA's outline. TT shall provide summaries that present the essence of all comments on a particular topic, including quotations from specific commenters as needed. TT will not develop EPA responses to these summaries. This TD is requesting work similar to what was done in the Response to Comment for the HHC Update in 2015.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 7/22/2019 2:00:09 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject:** Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Here's the document that Miller, Gregory shared with you.

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Draft GenX Assessment Resp to Public Comments jbs

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/5/2020 4:24:24 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "GenX Update 11 5 20" with you.

still working on it. I'll send you my notes to just so you have them.

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GenX Update 11 5 20

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Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 6/20/2019 2:47:14 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** RE: Letter to NTP requesting their review of GenX slides
**Attachments:** DuPont-18405-1307.pdf; DuPont-18405-1037.pdf; Elmore et al 2016.pdf; Thompson et al 2019.pdf

I attached the ToxStrategies paper too just in case.

These refs are attached:

DuPont-18405-1037: E.I. du Pont de Nemours and Company. 2010. An Oral (Gavage) Reproduction/Developmental Toxicity Screening Study of H-28548 in Mice. U.S. EPA OPPTS 870.3550; OECD Test Guideline 421. Study conducted by WIL Research Laboratories, LLC (Study Completion Date: December 29, 2010), Ashland, OH.

DuPont-18405-1307: E.I. du Pont de Nemours and Company. 2010. H-28548: Subchronic Toxicity 90-Day Gavage Study in Mice. OECD Test Guideline 408. Study conducted by E.I. du Pont de Nemours and Company (Study Completion Date: February 19, 2010), Newark, DE.

Elmore, S. A., D. Dixon, J. R. Hailey, T. Harada, R. A. Herbert, R. R. Maronpot, T. Nolte, J.E. Rehg, S. Rittinghausen, T.J. Rosol, H. Satoh, J.D. Vidal, C.L. Willard-Mack, and D.M. Creasy. 2016. Recommendations from the INHAND Apoptosis/Necrosis Working Group. Toxicologic Pathology 44:173-188. DOI: 10.1177/0192623315625859.

Attachments

Elmore, S. A., D. Dixon, J. R. Hailey, T. Harada, R. A. Herbert, R. R. Maronpot, T. Nolte, J.E. Rehg, S. Rittinghausen, T.J. Rosol, H. Satoh, J.D. Vidal, C.L. Willard-Mack, and D.M. Creasy. 2016. Recommendations from the INHAND Apoptosis/Necrosis Working Group. Toxicologic Pathology 44:173-188. DOI: 10.1177/0192623315625859.

---

**From:** Strong, Jamie
**Sent:** Thursday, June 20, 2019 10:36 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Letter to NTP requesting their review of GenX slides
**Importance:** High

Can you provide refs/attachments? Need to get to BB.

---

**From:** Behl, Betsy
**Sent:** Thursday, June 20, 2019 10:04 AM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Letter to NTP requesting their review of GenX slides

Super. thanks

**From:** Nagle, Deborah
**Sent:** Thursday, June 20, 2019 9:58 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Letter to NTP requesting their review of GenX slides

This memo looks fine. I made a couple of edits. See attached. Please print the memo on Office of Water letter head and have this ready for my signature on Monday.

-Deborah

Deborah G. Nagle, Director
Office of Science and Technology
1200 Pennsylvania Ave, NW
Washington, DC 20460
Tel: (202) 564-1185

**From:** Behl, Betsy
**Sent:** Monday, June 17, 2019 1:33 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Letter to NTP requesting their review of GenX slides

Deborah,

Attached above is the letter we drafted for you to send to the NTP requesting their review of the Chemours slides. We presume that this letter will come from you to Dr. Berridge. It doesn't say anything about timing, as we don't know yet when we can get the slides. Hopefully Dave will sign the letter to Chemours soon.

Please let us know if you have comments on this letter. If you approve we will have it formatted for your signature when you return.

Betsy

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/5/2020 4:59:52 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: LOOK OK? GenX chemicals follow up

Britt's edits work for me.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, November 5, 2020 11:58 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

Yeah, that was weird. I provided additional edits for where Greg commented. I think if we make those changes it will be accurate.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, November 05, 2020 11:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

I'm also confused. Can we do a quick call?

I think the green highlight indicates recent changes made by somebody else. It eventually goes away.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, November 5, 2020 11:43 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

Im confused.

I cleaned up. There is also green highlight I cant get rid of.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, November 05, 2020 11:41 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

I'm not sure about the edits in Anna's comments. I flagged the passage in a comment bubble.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, November 5, 2020 11:35 AM

**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

Email looks good and I just took another look at the comments and updated. I think the edits look good.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, November 05, 2020 11:07 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

Can you two take a quick look at responses? one comment and minor edits.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, November 05, 2020 11:00 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: LOOK OK? GenX chemicals follow up

Looks good to me.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, November 5, 2020 10:51 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** LOOK OK? GenX chemicals follow up

Colleen,
I wanted to update you on where we are with the follow up items Deborah asked we attend to for GenX.

1. OPP comments from Anna Lowitt
    - We have responses to the comments provided. We don't have follow up questions for Anna. Bottom line is that we disagree with her conclusions related to the SC to C and DB UF.
        - We reached out to several groups to discuss these issues including: Bevin Blake (author) now at ORD and Sue Fenton at NIEHS; Samantha Jones, Andrew Kraft, and Allen Davis in ORD; Jason Lambert and Beth Owens, ORD PFBS team; and Earl Gray and Justin Connelly in ORD RTP. Ultimately we still recommend that a full Agency review (same group that PFBS team used including all Program Offices and Regions and Regional PFAS coordinators) be initiated to get a full Agency perspective on the application of guidelines and policy in the UF decisions. I would also recommend that perhaps engaging ORD RTP repro/dev experts (like Tammy Stoker) as part of this review would be beneficial.
2. Outreach to thyroid experts
        - Reached out to ORD scientists Mary Gilbert and Tammy Stoker on Blake paper thyroid assays and results as recommended by Anna. Their bottom line was that the assays and lab that did the work are the gold standard for thyroid (LC MS). They also provided feedback/had some questions related to the endpoints but did not flag any fatal flaws of the study. Thyroid is NOT our critical endpoint. We have identified it as an uncertainty given there is some data to support it as a hazard. Additionally, other PFAS elicit thyroid effects.

**Jamie B. Strong** | Chief, Human Health Risk Assessment Branch
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/5/2020 5:33:51 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: recent GenX meeting notes
**Attachments**: Conversation with Mary Greene and Tammy Stoker about Blake et al 2020 Thyroid effects 11 3 20.docx; Topics of conversation with ORD for GenX UFd 10 8 20 - gMiller notes.docx; Conversation with Blake and Fenton 10 29 20.docx

I've made a first pass and putting together bullets summarizing these meetings. You can fill in the Conley/Grey meeting summary. Here are my meeting notes in case you need them. We can download the doc and send it to Jamie once you've had your turn.

Thanks!

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/30/2019 3:24:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

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Draft GenX Assessment Resp to Public Comments jbs

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/30/2019 6:29:26 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: Michigan DEQ and MDHHS comments on GenX
**Attachments**: Michigan Department of Environmental Quality_MDHHS.pdf

They submitted a combined set of comments.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/21/2019 10:48:37 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: out sick today

Sure thing.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, October 21, 2019 6:09 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: out sick today

Can you two still meet on GenX and maybe go through RTC and divvy out things that are still not fleshed out or polished?

Thanks,
Jamie

---

**From:** Strong, Jamie
**Sent:** Monday, October 21, 2019 6:08 AM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>; DAnglada, Lesley <DAnglada.Lesley@epa.gov>; Young, Melanie <Young.Melanie@epa.gov>; Nappier, Sharon <Nappier.Sharon@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Greene, Sophie <Greene.Sophie@epa.gov>; Keel, Adrienne <Keel.Adrienne@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Donohue, Joyce <Donohue.Joyce@epa.gov>
**Cc:** Snowden, Belinda <snowden.belinda@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Harper, Ashley <harper.ashley@epa.gov>
**Subject:** out sick today

I will be out of the office on sick leave today. Greg Miller will be acting.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/14/2019 12:20:22 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: GENX CHEMICALS TRIAGE

Sounds good

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, November 14, 2019 7:20 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX CHEMICALS TRIAGE

I agree. Could definitely use the time to work.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, November 14, 2019 7:19 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GENX CHEMICALS TRIAGE

I don't think we need a call, but can use the time to work on the action items from yesterday. Tell me if I am wrong. Happy to jump on for a minute.

-----Original Appointment-----
**From:** Strong, Jamie
**Sent:** Monday, October 28, 2019 10:03 AM
**To:** Strong, Jamie; Miller, Gregory; Jacobs, Brittany
**Subject:** GENX CHEMICALS TRIAGE
**When:** Thursday, November 14, 2019 10:00 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:**

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/14/2019 11:56:19 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: draft revised schedule
**Attachments**: Schedule for GenX-PFBS toxicity assessments 111319_blj gMiller.docx

Made 1 minor edit in the schedule. We didn't get the NTP report until November.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, November 14, 2019 6:16 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: draft revised schedule

Took a quick look at this.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, November 13, 2019 7:21 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** draft revised schedule

Feedback please

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/18/2019 6:33:39 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GENX CHEMICALS TRIAGE

As is who is giving the briefing? No, but Betsy will be there. The briefing material was to go to Dave Ross at noon.

Greg

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, November 18, 2019 12:25 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX CHEMICALS TRIAGE

Thanks. Any word on the briefing?

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, November 18, 2019 12:21 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX CHEMICALS TRIAGE

Right right, it said something about being available the first half hour so I just wasn't sure. Hope settlement went well! Greg and I checked-in and think we should send the ORD list as is. I'll send along an email shortly that we can send to ORD.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, November 18, 2019 12:10 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX CHEMICALS TRIAGE

Sorry, I sent an email last week saying I was keeping this on calendars to give us the block of time but that I would be out at settlement.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, November 18, 2019 9:00 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX CHEMICALS TRIAGE

Hi,

Are we touching base this morning? The only thing I wanted to confirm was if I should send our modeling list to ORD? I'm not sure we want to combine after our discussion with Jason and Beth, but it will be better to have it than not.

Repro/developmental study

- Single cell necrosis, males
- Single cell necrosis, females
- Single cell necrosis, males and females combined
- Necrosis (single cell and focal necrosis combined) males

- Necrosis (single cell and focal necrosis combined) females
- Necrosis (single cell and focal necrosis combined), males and females combined
- Cytoplasmic alteration (which includes hypertrophy), males
- Cytoplasmic alteration (which includes hypertrophy), females
- Cytoplasmic alteration (which includes hypertrophy), males and females combined

90 day study

- Focal necrosis, females
- Necrosis (single cell and focal necrosis combined), females

Britt

-----Original Appointment-----
**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, October 28, 2019 10:05 AM
**To:** Strong, Jamie; Miller, Gregory; Jacobs, Brittany
**Subject:** GENX CHEMICALS TRIAGE
**When:** Monday, November 18, 2019 9:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST;

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/19/2019 8:48:56 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: double check on incidence data
**Attachments**: Appendix A count mark up blj_gMiller.pdf; NTP PWG_Incidence Reports for liver effects_GenX chemicals_11.4.19 gMiller.xlsx

I was only able to get through the 90day mouse study. So I think maybe you were just asking me to count the necrosis incidence, but I ended up counting all of the endpoints since I noticed the slide was missing for Animal #251 and the N in the data table was listed as 10. I also found a problem with the count for Mixed Cell Infiltrate for the Group 4 males. Can you double check that one? Attached is your table with some comments in it and I scanned the copy of Appendix A you gave me.

I'll work through the Repro/Dev tomorrow.

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, November 19, 2019 10:36 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** double check on incidence data

Thanks for providing a second check!

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/20/2019 7:14:48 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Notes from NTP PWG GenX meeting
**Attachments**: NTP PWG questions with NTP response notes 11 20 19.docx

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/21/2019 2:56:41 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Briefing sheet for systematic review discussion with OPPT
**Attachments**: GenX chemicals Response to Public Comments on Systematic Review_OPPT gMiller.docx

A few comments in redline. It looks like that big table is in there twice.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, November 21, 2019 8:55 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Briefing sheet for systematic review discussion with OPPT

Thanks for taking a look!

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/20/2019 2:43:12 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: double check on incidence data
**Attachments**: NTP PWG_Incidence Reports for liver effects_GenX chemicals_11.4.19 gMiller.xlsx; Appendix B count mark up blj_gMiller.pdf

Sorry, I got sidetracked and forgot to send this. Females are coming soon…

Here's the count for the males in the repro/dev. Found 4 discrepancies. I'm working on the females now. Can you double check the male counts?

This is incredibly tedious work :/

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, November 19, 2019 4:44 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: double check on incidence data

I also counted 6 and I agree with your comment that the n should be 9 in group 2 females

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, November 19, 2019 3:49 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: double check on incidence data

I was only able to get through the 90day mouse study. So I think maybe you were just asking me to count the necrosis incidence, but I ended up counting all of the endpoints since I noticed the slide was missing for Animal #251 and the N in the data table was listed as 10. I also found a problem with the count for Mixed Cell Infiltrate for the Group 4 males. Can you double check that one? Attached is your table with some comments in it and I scanned the copy of Appendix A you gave me.

I'll work through the Repro/Dev tomorrow.

Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, November 19, 2019 10:36 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** double check on incidence data

Thanks for providing a second check!

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/26/2019 5:27:32 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX RTC

That would be great.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, November 26, 2019 12:09 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX RTC

One thing I want to do (and think we have to do because BB will want to double check) is have someone go through the comments and make sure they are all reflected in the summary. Enter Casey. I have given her the bins and comments and access to the RTC. She isnt doing anything yet other than getting familiar. But I thought this might be something that she can help confirm.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/20/2019 2:57:20 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: double check on incidence data
**Attachments**: Appendix B count mark up blj_gMiller.pdf; NTP PWG_Incidence Reports for liver effects_GenX chemicals_11.4.19 gMiller.xlsx

Females included in the spreadsheet now. Found 1 more error.

---

**From:** Miller, Gregory
**Sent:** Wednesday, November 20, 2019 9:43 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** RE: double check on incidence data

Sorry, I got sidetracked and forgot to send this. Females are coming soon…

Here's the count for the males in the repro/dev. Found 4 discrepancies. I'm working on the females now. Can you double check the male counts?

This is incredibly tedious work :/

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, November 19, 2019 4:44 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: double check on incidence data

I also counted 6 and I agree with your comment that the n should be 9 in group 2 females

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, November 19, 2019 3:49 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: double check on incidence data

I was only able to get through the 90day mouse study. So I think maybe you were just asking me to count the necrosis incidence, but I ended up counting all of the endpoints since I noticed the slide was missing for Animal #251 and the N in the data table was listed as 10. I also found a problem with the count for Mixed Cell Infiltrate for the Group 4 males. Can you double check that one? Attached is your table with some comments in it and I scanned the copy of Appendix A you gave me.

I'll work through the Repro/Dev tomorrow.

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, November 19, 2019 10:36 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** double check on incidence data

Thanks for providing a second check!

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 12/11/2019 4:59:50 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: week of 12/9 status update GenX chemicals

**Importance**: High

fyi

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, December 11, 2019 11:48 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** week of 12/9 status update GenX chemicals
**Importance:** High

Betsy,
Just wanted to give you an update on where we are with the Response to Comments (RTC) due 12/15 according the schedule you developed for Dave. It is not complete. Greg and I are working the majority of our time on this document, but that has proven difficult with other competing priorities, tasks, and meetings including the RAF, WQS Academy, and OST retreat. It is not as simple as clear the decks, there is branch work that still needs to happen. We also received the NTP report late (due end of October, draft delivered mid-November and the final report and counts just came 12/4).

The RTC document has responses for the majority (98%) of comments. Some are complete and "polished". However, there are a large portion that are still draft and that Greg and I are working through. These comments deal with issues including, the SC to C UF, MOA, and critical effect.

Casey has gone through the RTC and the actual public comments to ensure that TT summarized things correctly and didn't leave anything important out, but neither Greg or I have had time to evaluate what she did for us.

We have sent an email (12/11) to ORD requesting help with BMD modeling of the incidence data from the NTP PWG analysis. I asked for a timeline to complete the request.

We are also working with ICF on the remaining systematic review tasks (updated lit search through October and systematic review of those studies). This is very foreign to me so it's a learning curve.

We will continue to finalize the RTC, but with holiday leave and an unrelenting calendar and workload I can only shoot for December.

Next steps, following completion of the RTC will be to revise the document starting with all the editorial/minor comments. Then we will take the RTC and make larger more wholesale revisions. There will be extensive amounts of writing around the study summaries and the selection of the critical study and endpoint and MOA, possibly SC to C UF.

Please let me know if you have any questions.

Jamie

**Jamie B. Strong** | Chief, Human Health Risk Assessment Branch
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water

U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/19/2020 1:40:58 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: favor
**Attachments**: OPPT Review of OW GenX Document_10-02-2020.docx; GenX comments_ALowit.docx

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, November 19, 2020 8:29 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** favor

Can either of you send me the OPPT responses in one email so I can send to Betsy again?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 1/27/2020 6:00:45 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: Toxicokinetic Chapter.
**Attachments**: GenX Toxicokinetics Section 2_1-26-2020 JMD.docx

Here is Joyce's update of the toxicokinetic section. I'm still working on the Conley and PPAR section that Joyce wrote up. It's been very helpful to have her take the first crack but I've had to keep a close eye on the details. The Conley paper in particular was super-complex.

Greg

---

**From:** Donohue, Joyce <Donohue.Joyce@epa.gov>
**Sent:** Monday, January 27, 2020 11:31 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Toxicokinetic Chapter.

Dear Greg:

I did lots of editing to this chapter because some of the new studies including improve our understanding of the toxicokinetics for Gen X. You will be able to see where I made changes and I can go beck to the original if you want. Because what I did was so substantial in places, I cleaned out the old text to support a comprehension. If you find statements that are not clear, I will be happy to revise again.

Today is not a work day for me but I wanted to get this to you. I will be in tomorrow.

Joyce

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/27/2020 4:31:50 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Chemicals Assessment on OneDrive

I don't know what's going on. Maybe the problem is that I forwarded you the link that Brittany shared with me. Maybe try the original link she sent to you in an email on 2/18/20 at 11:18am.

I'm guessing what the problem is though. I've had trouble saving the file in the past too.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, February 27, 2020 10:50 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX Chemicals Assessment on OneDrive

So darn frustrated. It says I cant save it to the one drive.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, February 27, 2020 9:13 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: GenX Chemicals Assessment on OneDrive

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, February 18, 2020 11:18 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX Chemicals Assessment on OneDrive

Hopefully this will work better.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/25/2020 12:19:24 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "GenX RfD w BW3_4 & UF _ RfD v2_24_20" with you.

BW3/4 and RfD calculation spreadsheet.

This link only works for the direct recipients of this message.

GenX RfD w BW3_4 & UF _ RfD v2_24_20

Open

Microsoft OneDrive

Sender will be notified when you open this link for the first time.

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/9/2020 3:26:17 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: Miller, Gregory shared "GenX RfD w BW3_4 & UF _ RfD v2_24_20 UFd 10" with you.

Re-sharing. This is the version with UFd = 10.

This link only works for the direct recipients of this message.

GenX RfD w BW3_4 & UF _ RfD v2_24_20 UFd 10

Open

Microsoft OneDrive

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/9/2020 4:15:55 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: genx

same

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, March 9, 2020 11:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx

I don't think so

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, March 09, 2020 11:41 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** genx

Do we need to meet with pfbs people?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 12/4/2019 5:16:04 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: Pathology Peer Review Report of Liver Findings from GenX Chemical Studies
**Attachments**: PathologyPeer Review Report of Liver Findings fro20191204120533.zip

Testing to see if these files can be sent internally as a zip.

---

**From:** Elmore, Susan (NIH/NIEHS) [E] <elmore@niehs.nih.gov>
**Sent:** Wednesday, December 4, 2019 12:00 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Sills, Robert (NIH/NIEHS) [E] <sills@niehs.nih.gov>; Berridge, Brian (NIH/NIEHS) [E] <brian.berridge@nih.gov>; Brix, Amy (NIH/NIEHS) [C] <brix@niehs.nih.gov>; Elmore, Susan (NIH/NIEHS) [E] <elmore@niehs.nih.gov>
**Subject:** Pathology Peer Review Report of Liver Findings from GenX Chemical Studies

Dear Greg, Betsy, Jamie and Brittany,

I've sent these files to you via secure file transfer due to email size limits:

1) Final pdf report for the pathology peer review of liver findings from GenX chemical studies
2) Word document (as requested)
3) Word document with tracked changes
4) Appendix A
5) Appendix B

Please let me know if you have any problems with the download.
We appreciate the opportunity to be able to provide this histology peer review evaluation hope that you will find this helpful as you move forward with GenX chemicals assessment.
We hope that there will be future opportunities for us to collaborate on issues of significant public health interest.

Best regards,

Susan

Susan A. Elmore, MS, DVM, DACVP, DABT, FIATP
Staff Scientist/NTP Pathologist
Group Leader, NIEHS Embryo Phenotyping Core
Group Leader, NIEHS Special Techniques Core
Cellular and Molecular Pathology Branch
National Toxicology Program/NIEHS
111 TW Alexander Drive
RTP, NC 27709
984-287-3834
http://www.niehs.nih.gov/research/atniehs/labs/lep/ntp-path/staff/elmore/index.cfm

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/9/2020 4:35:31 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: GenX discuss study/effect selection - Section 6
**Attachments**: Public Comment Draft_ Human Health Toxicity Values for GenX chemicals Section 6.pdf; GenX Section 6_ Edit Copy 3_9_20 .pdf

Attached the old version from the public comment and the newest work-in-progress version as of 12:30pm today.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/14/2020 6:37:10 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Review
**Attachments**: NTP PWG_Incidence Reports for liver effects_GenX chemicals_1.16.20 - NO DEAD MICE.xlsx

For discussion

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, April 14, 2020 2:33 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Review

Hey looking at this now and am concerned about the rationale not to model cyto alteration. Please see my comment.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, April 14, 2020 2:12 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX Review

Hi,

I just finished my edits to 6 and 7, so I think those sections are ready for another round of review. I am moving on to updating the systematic review section.

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 12/10/2020 2:14:15 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: FW: GenX tech edit version of assessment and response to comments

<!--[if lte mso 15 || CheckWebRef]-->

Miller, Gregory has shared OneDrive for Business files with you. To view them, click the links below.

DRAFT FINAL GenX Chemicals Toxicity Assessment_Tech Edit_7.27.20.docx

GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020.docx

<!--[endif]-->

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, September 9, 2020 8:53 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX tech edit version of assessment and response to comments

Hi,

Here are links to the tech edited versions of the assessment and response to comments.

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/31/2020 2:08:39 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "GenX RfD w BW3_4 & UF _ RfD v3_30_20 UFd 10" with you.

Miller, Gregory shared "GenX RfD w BW3_4 & UF _ RfD v3_30_20 UFd 10" with you.

This link only works for the direct recipients of this message.

GenX RfD w BW3_4 & UF _ RfD v3_30_20 UFd 10

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/31/2020 2:00:41 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: Discuss Dupont 18405-1307 90 day mouse
**Attachments**: NTP PWG_Incidence Reports for liver effects_GenX chemicals_1.16.20 - NO DEAD MICE.xlsx

**Start**: 3/31/2020 2:30:00 PM
**End**: 3/31/2020 3:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Strong, Jamie; Jacobs, Brittany

Can we use your call in #, Jamie?

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/1/2020 2:24:13 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: FW: Requesting input on PFBA_draft database UF _September2020_v5.docx
**Attachments**: PFBA_draft_UFd_September2020- HECD-OST_v5 JD.docx; PFBA_draft_UFd_September2020_v5 OST 10 1 20.docx

Sorry, I thought you guys were cc'd on Joyce's email yesterday. Attached here are the original comments Joyce sent and my attempt at integrating her most important edits and comments into our working draft. "PFBA_draft_UFd_September2020_v5 OST 10 1 20.docx" is the finished draft. Joyce's ruling is that GenX and PFBA are not structural analogs. Have a look and we can plot what comes next.

Greg

---

**From:** Donohue, Joyce <Donohue.Joyce@epa.gov>
**Sent:** Wednesday, September 30, 2020 2:09 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: FW: Requesting input on PFBA_draft database UF _September2020_v5.docx

Dear Greg:

Given that I was not able to get connected to the VPN this morning, I had sent your e-mail to my personal computer. I had lots of comments. You can delete any you feel are inappropriate.

I now can get to my files and want to look at the most recent papers I have saved for GenX before I respond to you regarding Gen-X. I did explain my stearic concerns regarding equating it with PFBA in my comments.

Joyce

---

**From:** JOYCE DONOHUE <joyce.donohue@comcast.net>
**Sent:** Wednesday, September 30, 2020 1:45 PM
**To:** Donohue, Joyce <Donohue.Joyce@epa.gov>
**Subject:** Re: FW: Requesting input on PFBA_draft database UF _September2020_v5.docx

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/5/2020 11:19:48 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Response to Comments Updated

I updated the UFd section and have been back and forth over it. But I haven't closely read Britt's edits yet. Will check them out today too.

Greg

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, May 5, 2020 7:18 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Response to Comments Updated

Woo hoo! I will focus on this today…Greg did you need to go through this first?

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, May 05, 2020 6:25 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX Response to Comments Updated

Good Morning,

I've gotten through the response to comments. There are a few comments in the implementation section I didn't know what to do with, but I've tried to update everywhere else.

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/5/2020 5:13:46 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

I'll try resharing it with you but I'm not confident that will solve the problem. If it doesn't, maybe Brittany can move it to her OneDrive like she did for the Draft.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, May 5, 2020 1:11 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

I cant open this

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Friday, May 01, 2020 10:58 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

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Draft GenX Assessment Resp to Public Comments jbs

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/27/2020 12:59:12 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX reorg

Ok, we'll check in and see if there's any headway to be made.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, May 27, 2020 8:57 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX reorg

So I am tied up this morning as I have to read the Tox Profile for molybdenum and do a briefing for Anna ASAP. Good times. I have a busy afternoon today and an all day retreat tomorrow. I told Greg that if you two want to talk and tackle reorg the MOA section that is fine with me. If there are questions I need to weigh in on I will find another time, but it will be next week (or Friday if you two are working).

Sorry.

Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/29/2020 11:07:29 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX consent order news

Picked up elsewhere too:

https://insideepa.com/daily-news/epa-fails-resolve-ig%E2%80%99s-calls-bolster-oeca%E2%80%99s-role-tsca-5e-orders

https://thehill.com/policy/energy-environment/499953-internal-watchdog-faults-epas-lack-of-communication-in

---

**From:** Miller, Gregory
**Sent:** Thursday, May 28, 2020 1:42 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** GenX consent order news

https://www.eenews.net/greenwire/2020/05/28/stories/1063257317

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/18/2020 6:22:26 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

Sorry. Forgot to change the file name before. So delete the earlier share link. Thanks.

This link only works for the direct recipients of this message.

Charge Questions for GenX chems EPR2 5_18_2020

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/20/2020 4:51:34 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: schedule steps
**Attachments**: GenX final schedule gMiller.docx

Some minor tweaks to consider.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, May 20, 2020 10:07 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** schedule steps

Okay so like BB said she is going to talk to Deborah about strategy related to process. I have outlined what I think are the steps, stealing from what PFBS went through/is going through. Its hard to tell the time frames for some of the interagency steps based on what Jason sent. Let me know if you think I have every step here then I can worry about time. I tried to be as granular as possible. Its real rough but you might see something I am missing.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
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1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/2/2020 3:28:32 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: GenX schedule

I agree with that. It's impossible to predict how long it will take to respond so asking for more time and then using less is probably the ideal situation.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, June 2, 2020 11:12 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX schedule

Here are my thoughts on schedule. I suggest we give ourselves at least two weeks to respond to anyone else's comments. If we don't need the time that is fine, but I'd rather have it.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, June 02, 2020 7:32 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: GenX schedule
**Importance:** High

What I sent her was a draft, I said that. A starting point. Now that she has the doc she is taking things and running with them. It is overwhelming. I tried to edit. Look at this and be honest given the situation we are all three under at home and tell me if these dates are workable. Lots to talk about today.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Monday, June 01, 2020 6:22 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX schedule

I filled in some dates. Should we go over this (highlights) with Deborah tomorrow?

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, May 20, 2020 3:42 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX schedule

Betsy,
Attached is a very rough draft schedule for wrapping up GenX. I am mainly trying to lay out process steps in some granular detail here. I am not sure about timing for some steps like reviews (i.e., how long our IO will take or what the interagency timeframes are…I cant tell from what Jason sent). This is mainly to start a discussion with you. Let me know

if you want to set up time to talk, like I said its really rough. One thing that is apparent is that November is probably not possible.

Jamie

**Jamie B. Strong** | Chief, Human Health Risk Assessment Branch
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☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/15/2020 4:21:24 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: BB is asking me to brief Deborah at biweekly on GenX

We don't really have an idea how long the final interagency TWG review (in the last bullet) will take right? Maybe say that the length of the review will be negotiated sometime in the future.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, June 15, 2020 12:04 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** BB is asking me to brief Deborah at biweekly on GenX
**Importance:** High

Hey, she is forcing me to present a schedule. Can you look at this and let me know what you think?

-Received comments on MOA and UFs from ORD (Samantha Jones, Jason Lambert, Beth Owens), NIEHS (Sue Fenton and Bevin Blake) and are incorporating edits.
-Received comments from Betsy on document and response to comments, revising documents per these comments.
-Plan is to send the doc to OPPT (Tala Henry) and ask her to focus on UFs, systematic review, and changes to the derivation of the RfD based on the NTP PWG results (hopefully by end of this week)
-We have scheduled a briefing for you on 7/6, we will provide a draft for your review at this time (note tech edit will happen post your review)
-Brief OW IO beginning of August
Prior to peer review, will need to take charge to TWG. PFBS went through this process previously, the interagency group was given the charge and the document. They were asked to only comment on the charge. This process took 3 weeks. Anticipate briefing TWG by 8/31.
-Contract for additional peer review is already in place, we still need to engage contractor to start to put panel in place and talk about when we expect to be ready (based on TWG review this should be early to mid- September. Peer review will take 4 weeks. Following peer review, team will need to time revise (anticipate 4 weeks).
- Prior to posting we need to submit to TWG for a final interagency review (PFBS is currently in this process right now). We anticipate this will occur in November/December 2019.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
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☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/11/2020 1:45:40 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: PFBS MW conversions - applicable to GenX?
**Attachments**: PFBS MW Adjustment Info v2.docx

Casey put together this very helpful 1-pager describing the molecular weight conversions used in the PFBS assessment. I added some comments in the margins that show the parallels with GenX. I'm leaning toward adding a similar conversion to GenX unless you all feel differently. I suspect that any analytical methods for GenX in water will detect the free acid, not the salt. But maybe we should verify that.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/4/2020 12:37:30 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: briefing
**Attachments**: Summary of Public Comment for GenX chemicals and PFBS_7.12.19.docx

The briefing was in February 2019, but for some reason I updated the file in July 2019. I think Brittany and I did the briefing for Deborah without you for some reason.

Greg

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, June 4, 2020 8:29 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** briefing

didn't we do something after we got public comments? I am having trouble figuring out what to include in deborah's briefing.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 5/20/2020 11:03:15 AM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject:** GenX news

https://www.eenews.net/eenewspm/2020/05/19/stories/1063179987

WATER POLLUTION

## No charges over chemical releases in N.C. river

Tamara Ward, E&E News reporter
Published: Tuesday, May 19, 2020

The Cape Fear River in North Carolina. Greg Duckworth II/Flickr

Federal prosecutors won't pursue charges against a Delaware-based chemical company for possible violations of the Clean Water Act over its wastewater releases into a North Carolina river.

Chemours Co., a subsidiary of DuPont Inc., told shareholders in a quarterly Securities and Exchange Commission **filing** earlier this month that the Department of Justice had closed the case against the company over its disposal of GenX, a perfluorooctanoic acid (PFOA) substitute, into the Cape Fear River.

Chemours reported in the filing that it had responded to grand jury subpoenas, produced witnesses for interviews with government investigators, and met with the U.S. Attorney's Office for the Eastern District of North Carolina and the Department of Justice's Environment and Natural Resources Division during the investigation.

"In March 2020, the U.S. Attorney notified the Company that, after an extensive review of the law and all the facts, it declined to pursue any criminal action against Chemours and is closing its file," read the report.

DOJ did not respond to a request for comment in time for publication.

The news was previously reported by NC Policy Watch, which said a spokesman for the U.S. Attorney's Office in North Carolina confirmed the charges were dropped.

GenX, which is used in producing nonstick surfaces, has been found downriver nearly 100 miles in the drinking water wells and the municipal water utility serving Wilmington, N.C. Some residents have reported health problems, though research on the chemical's health effects has been limited.

In January 2017, Chemours vowed to stop discharging the chemical in its wastewater (***Greenwire***, June 21, 2017).
More than two years later, EPA launched a probe of GenX releases (***Greenwire***, Sept. 24, 2019).
Earlier this year, EPA in a budget proposal suggested adding GenX to a list of chemicals to prioritize for policy and regulatory action (***E&E News PM***, Feb. 12).

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/22/2020 1:57:39 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Strong, Jamie is inviting you to collaborate on Briefing-draft GenX chemicals tox assessment June 18 2020

I have some edits to make it a little more clear to people that aren't in the weeds like we are. I know we've explained apoptosis and necrosis to Deborah before, but I'm not confident she remembers what we've said before.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, June 22, 2020 9:37 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Strong, Jamie is inviting you to collaborate on Briefing-draft GenX chemicals tox assessment June 18 2020

I cant remember if I replied. Yeah a bullet above each table sounds good.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, June 19, 2020 6:46 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Strong, Jamie is inviting you to collaborate on Briefing-draft GenX chemicals tox assessment June 18 2020

I went through and filled in the DB UF, MOA and systematic review tables. Something I feel like is missing is what the commenters said for the changes outside of the selection of critical effect. Maybe at the top of each table we can provide a brief summary of what the commenters said about the topic? Like for systematic review we say something like, the majority of comments received asked us to use ORD's systematic review process. This might help provide some context for why we did what we did. Thoughts?

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, June 18, 2020 1:58 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Strong, Jamie is inviting you to collaborate on Briefing-draft GenX chemicals tox assessment June 18 2020

updated, will need help filling in the major changes. see if you like format.

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Briefing-draft GenX chemicals tox assessment June 18 2020

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 1/12/2021 3:15:41 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: fact sheet genx-need help with dates asap

<!--[if lte mso 15 || CheckWebRef]-->

Miller, Gregory has shared a OneDrive for Business file with you. To view it, click the link below.

GenX Chemicals Factsheet_01122021 JBS clean.docx

<!--[endif]-->

Work off this version. I'm trying to track down the dates.

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, January 12, 2021 9:32 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** fact sheet genx-need help with dates asap
**Importance:** High

take a look

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/1/2020 11:55:35 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: FOR YOUR REVIEW-Revised RTC for GenX Chemicals

Yay!

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, July 1, 2020 5:17 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Revised RTC for GenX Chemicals

Woohoo!!

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, June 30, 2020 6:52 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FOR YOUR REVIEW-Revised RTC for GenX Chemicals
**Importance:** High

Betsy,
Attached is the revised RTC for GenX chemicals. There were pretty extensive edits per your comments. We have accepted changes that we agreed with and removed those comment bubbles. For other comments, we responded or offered an alternative edits when we didn't take a change you proposed. We have also noted if we moved, added, or edited text in additional comment bubbles so its easier to track.

Major changes to focus on are:
We completely overhauled the UF section. It is organized by UF, combining comments and providing one response as you requested. We had to accept edits in this part as it was just too messy.

We combined comments on adaptive effects where we could (you will see three categories), we left this in track changes so you could see what we combined and moved as it wasn't quite as bad as the UF section.

Please let us know what you think or if you have any questions.

There are still comments that need to go to OPPT and OLEM, we can pull those out for you after you review. This will also need a major tech edit (the comment numbers are all messed up due to the reorg and combining).

Thanks,
Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/23/2020 7:24:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: genx to do

Sure. I'll start it.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, June 23, 2020 3:20 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx to do

Okay I will start with the briefing tomorrow. Can someone start to go through the UF section? I don't know if we should just accept all the changes and start there or what? I don't know that we can have one response for the comments on the total UF or cumulative parts. Greg do you want to start?

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, June 23, 2020 2:59 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: genx to do

I've also been through the briefing and am working on adding the summary sentences right now.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, June 23, 2020 2:54 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: genx to do

On #1. I've been through the briefing. I think it might be a little too technical/detailed in some areas so I tried to smooth it out a bit. I'm hoping that the Deborah briefing would be largely useable for a briefing with Dave and Charlotte. I also added a summary table at the end that might be useful.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, June 23, 2020 2:33 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** genx to do

So I think these are the things we need to do:

1. Briefing-need to send to Betsy by Friday. Have both of you gone through it?
2. RTC-
    a. review and clean UF-need you guys to take a look
    b. policy section-jamie
    c. other sections-need you guys to continue cleaning up as much as possible, if we went through comments and accept either note in response or accept change

Do we need another hour to work through these?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 1/12/2021 4:25:55 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "GenX Chemicals Factsheet_01122021 JBS clean" with you.

Here's the document that Miller, Gregory shared with you.

This link only works for the direct recipients of this message.

GenX Chemicals Factsheet_01122021 JBS clean

Open

Microsoft OneDrive

Sender will be notified when you open this link for the first time.

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/24/2020 12:01:41 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: genx to do

Yeah, I guess I'm referring to 1pager as more of a style though ie just the basics. All bullets, no full sentences. But it can go 2 or 3 pages maybe.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, June 24, 2020 8:00 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: genx to do

Don't know, Betsy needs to figure that out. Not sure how to do it in one page other than to just be like we went to NTP, we took there conclusions, we changed x, y and z.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, June 24, 2020 7:58 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: genx to do

I'm kind of confused about the type of presentation we're trying for here. Is this a 1-pager type briefing where we're trying to give only the important points or is this a more expansive powerpoint type briefing where we have more room to get in to details?

I'm thinking we should go for 1-pager style so we can use it with Ross/Bertrand too since they surely won't have the time to get into the weeds.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, June 24, 2020 7:56 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: genx to do

Was just thinking the same thing!

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, June 24, 2020 7:52 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: genx to do

Yeah, I'm kind of thinking that table should be brought up to the front before the details get presented.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, June 24, 2020 7:51 AM

**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx to do

oh thank goodness. was like oh man.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, June 24, 2020 7:48 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx to do

Greg put a helpful summary table in at the end of the briefing that has the new RfD and how it compares to the public comment draft

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, June 24, 2020 7:36 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx to do

I just realized…we don't say what the new RfD is. We should probably include that. I woke up at like 2am with this revelation.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, June 24, 2020 5:03 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx to do

The briefing sheet is ready for review

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, June 23, 2020 3:20 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx to do

Okay I will start with the briefing tomorrow. Can someone start to go through the UF section? I don't know if we should just accept all the changes and start there or what? I don't know that we can have one response for the comments on the total UF or cumulative parts. Greg do you want to start?

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**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, June 23, 2020 2:59 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: genx to do

I've also been through the briefing and am working on adding the summary sentences right now.

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**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, June 23, 2020 2:54 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: genx to do

On #1. I've been through the briefing. I think it might be a little too technical/detailed in some areas so I tried to smooth it out a bit. I'm hoping that the Deborah briefing would be largely useable for a briefing with Dave and Charlotte. I also added a summary table at the end that might be useful.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, June 23, 2020 2:33 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** genx to do

So I think these are the things we need to do:

1. Briefing-need to send to Betsy by Friday. Have both of you gone through it?
2. RTC-
    a. review and clean UF-need you guys to take a look
    b. policy section-jamie
    c. other sections-need you guys to continue cleaning up as much as possible, if we went through comments and accept either note in response or accept change

Do we need another hour to work through these?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/13/2020 11:23:49 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX

Ok.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, July 13, 2020 7:23 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX

Hey guys, I have ELMS training M-Th from 9-11. Can you two start on the charge and revisions to briefing? I know Britt already started on the later. Thanks!

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/16/2020 6:29:59 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: genx charge

Great. Thanks. I'll send it back up to Jamie and see what she thinks.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, July 16, 2020 2:23 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx charge

Okay, I added in some thoughts. I think Jamie will need to provide some more direction. I also edited the MOA question. I know Jamie said something about calling out PPARalpha, but I don't think we should do that this round. I think we just need to ask if the evidence we provide justifies our conclusion that multiple MOAs are at play. I don't want it to be about PPARalpha.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, July 16, 2020 11:47 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: genx charge

Can you take another look at the charge when you get a chance? I've tried to respond to Jamie's comments but I'm not really sure if it's exactly what she wants. Your opinion would be helpful then we can run it back through Jamie again.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, July 16, 2020 9:58 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx charge

Sounds good to me

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, July 16, 2020 9:52 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: genx charge

Let's cut it then. All of those doc references are in the tox assessment.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, July 16, 2020 9:48 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx charge

I think it was in the original task order for the EPR (see attached). It looks like ERG may have pulled the background info and the documents provided by EPA in their report.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, July 16, 2020 7:04 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** genx charge

So that "REVIEW MATERIALS PROVIDED BY EPA" section on the charge continues to bother me. It actually didn't come from PFBS, I thought it was part of our charge in the 1st external peer review but I actually pulled our charge out of the 1st EPR report. So now I'm wondering if our charge was edited in the EPR report. Can you find an original version of the 1st peer review charge and see if it was included? Most charges don't include a section like this and I kind of think this section is unnecessary. But I want to better understand the history of how we got here.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/20/2020 11:26:04 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Technical Direction for TT

Thanks!

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, July 20, 2020 7:25 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Technical Direction for TT

I'm looking at this now and will have responses in a little bit. Greg, there are citations for Blake, Conley, and Thompson in this document that you can use for the charge.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Friday, July 17, 2020 11:14 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Technical Direction for TT

Can you two take a look?

---

**From:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Sent:** Friday, July 17, 2020 11:11 AM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; John Hochheimer <john.hochheimer@tetratech.com>
**Subject:** RE: Technical Direction for TT

Hi Shamima,

We are making good progress with the technical editing of the GenX documents. We've compiled our questions to-date for all of you in the attached document. Most of the questions are about the references for the GenX Human Health Toxicity Values document, and we also have some overall format questions about the GenX Response to Comments document.

Thank you,

Sue

---

**From:** Lanberg, Susan
**Sent:** Wednesday, July 08, 2020 1:28 PM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Hochheimer, John <John.Hochheimer@tetratech.com>
**Subject:** RE: Technical Direction for TT

Hi Shamima,

Thanks for sending us this TD. We'll get started on it right away. We'll let you know if we have any questions as we review the files.

Sue

---

**From:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Sent:** Wednesday, July 08, 2020 1:24 PM
**To:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Technical Direction for TT
**Importance:** High

⚠ **CAUTION:** This email originated from an external sender. Verify the source before opening links or attachments. ⚠

Hi Sue,

Please see Jamie's email below and the attached files for the tech edit of the GenX assessment and response to comment doc. Let us know if you have any questions.

Thanks,
Shamima

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, July 8, 2020 1:06 PM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Technical Direction for TT
**Importance:** High

Shamima,
Please send the attached TD to TT. This is for the tech edit of the GenX assessment and response to comment document (also attached). I am requesting a two week turn around of this work. Please let me know if there are any questions or concerns related to the timing.

Thanks,
Jamie

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/20/2020 11:42:59 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Technical Direction for TT

Brittany's responses look good. Nothing to add from me.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, July 20, 2020 7:38 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Technical Direction for TT

Here are my responses. Most of this was asking about references, but you might want to look at the questions about the response to comment (page 6 and 7). They asked to add an abbreviation/acronyms page to the response to comments which I thought might be helpful but will take more time. I said yes in the attached response so wanted to flag.

---

**From:** Jacobs, Brittany
**Sent:** Monday, July 20, 2020 7:25 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Technical Direction for TT

I'm looking at this now and will have responses in a little bit. Greg, there are citations for Blake, Conley, and Thompson in this document that you can use for the charge.

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**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
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**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; John Hochheimer <john.hochheimer@tetratech.com>
**Subject:** RE: Technical Direction for TT

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Sue

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**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Hochheimer, John <John.Hochheimer@tetratech.com>
**Subject:** RE: Technical Direction for TT

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Sue

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**Sent:** Wednesday, July 08, 2020 1:24 PM
**To:** Lanberg, Susan <Susan.Lanberg@tetratech.com>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Technical Direction for TT
**Importance:** High

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Thanks,
Shamima

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**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, July 8, 2020 1:06 PM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Technical Direction for TT
**Importance:** High

Shamima,
Please send the attached TD to TT. This is for the tech edit of the GenX assessment and response to comment document (also attached). I am requesting a two week turn around of this work. Please let me know if there are any questions or concerns related to the timing.

Thanks,
Jamie

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/16/2020 11:04:28 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: genx charge
**Attachments**: FINAL___Peer Review Report_Task 0008_GenX_Draft.docx

So that "REVIEW MATERIALS PROVIDED BY EPA" section on the charge continues to bother me. It actually didn't come from PFBS, I thought it was part of our charge in the 1st external peer review but I actually pulled our charge out of the 1st EPR report. So now I'm wondering if our charge was edited in the EPR report. Can you find an original version of the 1st peer review charge and see if it was included? Most charges don't include a section like this and I kind of think this section is unnecessary. But I want to better understand the history of how we got here.

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**Sent**: 7/20/2020 5:40:42 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

Looks good. I accepted edits and left a couple of notes in there to follow up on.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, July 20, 2020 11:49 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

A couple more edits…take a look. If good, lets clean up and send to Betsy.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, July 16, 2020 2:31 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

Yeah, I found your edits this morning. Britt and I have revised. Have another look. We're still kind of struggling in some areas. Maybe we need a call if this version doesn't work for you.

Greg

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, July 16, 2020 1:55 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

forgot to reply, looked at this last night. take a look at my edits/comments.

---

**From:** Strong, Jamie
**Sent:** Wednesday, July 15, 2020 2:52 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

Best team ever! I will take a look now.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, July 15, 2020 2:35 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

I went through it. I think it looks good, just a few edits and additions. Thanks for carrying the load on this one!

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, July 14, 2020 3:12 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Miller, Gregory shared "Charge Questions for GenX chems EPR2 5_18_2020" with you.

I've done work. Please have a look. Hopefully this is closer to being finished.

This link only works for the direct recipients of this message.

Charge Questions for GenX chems EPR2 5_18_2020

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/20/2020 5:56:06 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Snowden, Belinda [snowden.belinda@epa.gov]
**Subject**: RE: GenX meeting with OW IO

I'm going to be out of the office from 7/27-7/31.
I have a dentist appointment the afternoon of 8/5.
I have a doctor appointment from 10:30-12 on 8/19.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, July 20, 2020 1:52 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Snowden, Belinda <snowden.belinda@epa.gov>
**Subject:** FW: GenX meeting with OW IO
**Importance:** High

if there are days you cannot do this please respond here so Belinda knows.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Monday, July 20, 2020 1:50 PM
**To:** Snowden, Belinda <snowden.belinda@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX meeting with OW IO

Please put in a meeting request
subject: GenX update
Timing: 1 hour sometime in the second week in August
Invite: me, Jamie, Brittany, Greg miller, Deborah, Dave Ross, charlotte Bertrand, Owen McDonough.

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/21/2020 7:22:34 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: pfba

Great! Thanks Britt!

Jamie, can you take a quick look at my interspecies scaling comments when you get a chance. I went after them pretty hard but I think it was warranted after the email exchange yesterday. I'm debating whether to share them with IRIS before or after our Thursday meeting with Paul. I'll share the sharepoint doc with you next.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, July 21, 2020 1:54 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: pfba

I added in a comment bubble with a summary of the discussion we had

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, July 21, 2020 10:27 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** pfba

Brittany,
Can you summarize your understanding of what we agreed on with IRIS in the PFBA redline. It'll be good to have a record of our conversation.

Andrew's action items:

- Jamie checks on what of the GenX moa can be shared with IRIS
- Jason to draft general biology language specific to liver MOA. Hopefully this will be useable in GenX
- PFBA – make more specific reference to Hall criterial and they circle back to OW before sharing with Interagency reviw
- Share PFHxA with us once they have the liver MOA section written (prior to Agency review)

And here are the links Jason sent in the chat box:
https://pubmed.ncbi.nlm.nih.gov/?term=liver+aponecrosis

https://pubmed.ncbi.nlm.nih.gov/?term=liver+necroptosis

https://pubmed.ncbi.nlm.nih.gov/?term=liver+oncosis

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/21/2020 2:26:56 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: pfba
**Attachments**: McMullen2019_PPARa_omics_rat_human.pdf

Brittany,
Can you summarize your understanding of what we agreed on with IRIS in the PFBA redline. It'll be good to have a record of our conversation.

Andrew's action items:

- Jamie checks on what of the GenX moa can be shared with IRIS
- Jason to draft general biology language specific to liver MOA. Hopefully this will be useable in GenX
- PFBA – make more specific reference to Hall criterial and they circle back to OW before sharing with Interagency reviw
- Share PFHxA with us once they have the liver MOA section written (prior to Agency review)

And here are the links Jason sent in the chat box:
https://pubmed.ncbi.nlm.nih.gov/?term=liver+aponecrosis

https://pubmed.ncbi.nlm.nih.gov/?term=liver+necroptosis

https://pubmed.ncbi.nlm.nih.gov/?term=liver+oncosis

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/23/2020 1:30:09 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: genx draft

Will do.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, July 23, 2020 9:25 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: genx draft

Hey Greg,

Did you want to email this to the PFBA team? I've attached the copy we sent for the tech edit and added in the header to not distribute.

Britt

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, July 22, 2020 4:04 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: genx draft

go for it, tell them to NOT distribute.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, July 22, 2020 4:03 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Re: genx draft

I tho k you can share it with them

Sent from my iPhone

> On Jul 22, 2020, at 3:24 PM, Strong, Jamie <Strong.Jamie@epa.gov> wrote:
>
> During our discussion about PFBA and liver endpoints and MOA, ORD asked if they could see our draft (specifically language we use about Hall and liver endpts). Is this okay or should I excerpt sections? Just don't want a draft floating around not having talked to the IO. Please let me know so I can get back to them.
>
> Jamie
>
> **Jamie B. Strong |** Chief, Human Health Risk Assessment Branch

Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/30/2020 4:56:03 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Briefing on GenX

I'm out Wednesday (8/5) afternoon and Jamie said she will be out for a couple of hours in the middle of the day on Wednesday too.

Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, July 30, 2020 7:14 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Briefing on GenX

Friday for me.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, July 29, 2020 6:15 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Fwd: Briefing on GenX

Let's try to use the same briefing we used for Deborah to brief Jennifer and Eric. I can ask Belinda to find a time next week. This would be good to do before the IO briefing. Any days next week to stay away from?

Sent from my iPhone

Begin forwarded message:

> **From:** "Nagle, Deborah" <Nagle.Deborah@epa.gov>
> **Date:** July 29, 2020 at 6:05:04 PM EDT
> **To:** "Behl, Betsy" <Behl.Betsy@epa.gov>
> **Subject: RE: Briefing on GenX**
>
> I think that would be a good idea.
>
> -Deborah
>
> -----Original Message-----
> From: Behl, Betsy <Behl.Betsy@epa.gov>
> Sent: Wednesday, July 29, 2020 4:50 PM
> To: Nagle, Deborah <Nagle.Deborah@epa.gov>
> Subject: Briefing on GenX
>
> We are still waiting for the briefing to be set by the IO. Do you want us to give the briefing we gave you to Jennifer?

Sent from my iPhone

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/7/2020 11:04:06 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

Thanks! I'll work on it some more. These edits aren't too bad ☹ PFBS went through the major areas where they made changes. Our Ross briefing included more detail than PFBS did so I can edit ours down. Our NTP PWG situation is unique though and requires some extra detail for people to understand.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, August 7, 2020 6:53 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

Provided additional edits. I think it's ready for Greg to take a second look.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 06, 2020 8:49 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

Yup, just letting you know if finished up from last night. I have some thoughts but want to hear what you two think.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, August 06, 2020 8:48 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

I will look later this afternoon. I have a long DBP workplan kickoff meeting this morning and wanted to get the SYR4 workplan for OGWDW turned around.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 06, 2020 8:40 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

Added more comments and made some edits. I need you two to take a look.

---

**From:** Strong, Jamie
**Sent:** Wednesday, August 05, 2020 3:31 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

I started to look at this. It's a great start. I think we need to hone down the issues and revision slides. Some seem broad and some seem too detailed. I didn't have a chance to edit today and only got two issues in but take a look at my comments so far.

Thanks,
Jamie

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, August 04, 2020 3:05 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

Before I get too far along with these slides, can you guys take a quick look and see if I'm headed down the right path? The link in the email below should work. It's still pretty text heavy but I'm working on trimming it down.

- I generally took the PFBS format so as the TWG would be familiar.
- Since it's been vetted, I relied on our Dave Ross briefing for Background material and summarizing the NTP process
- Focused on the 5 topic areas of revision from the Dave Ross briefing to highlight how the public comment draft has changed since the last interagency review. Cut some of the detail (like listing all the commenter names) to make it fit on slides and de-emphasized the internal-EPA conflict on the Systematic Review.
- I copied our Charge questions in at the end.
- Anything else?

---

**From:** Miller, Gregory
**Sent:** Tuesday, August 4, 2020 10:18 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Miller, Gregory shared "GenX chems Slides for PFAS TWG_8 3 20" with you.

I'm still working on it. All of the blue text is a placeholder specific to PFBS and will be changed.

This link only works for the direct recipients of this message.

GenX chems Slides for PFAS TWG_8 3 20

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/21/2020 3:21:17 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: FOR YOUR REVIEW-Revised GenX chemicals charge
**Attachments**: Charge questions for GenX chemicals EPR2 082120 gMiller.docx

I read it with no markup and some editorial changes were needed. No substantive changes though.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Friday, August 21, 2020 10:18 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Revised GenX chemicals charge

Use this one! Sorry, I edited to address the comment below.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Friday, August 21, 2020 6:49 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Revised GenX chemicals charge

Hey,
When you're looking over Betsy's edits, can you also look at the passage below. Do we want them to comment on Blakes suitability as a candidate RfD or as the critical effect used to derive the overall RfD? Charlotte and Dave were questioning why we didn't use it for the overall RfD.

i. Please comment on the suitability of the Blake et al. (2020) placental lesions endpoint for selection as a candidate RfD. Is the decision to rely on the LOAEL/NOAEL approach for the candidate POD derivation of this endpoint justified?

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Thursday, August 20, 2020 5:01 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Revised GenX chemicals charge

Looks great. a couple of questions/edits. I think this is almost ready for Deborah

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 20, 2020 3:06 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Revised GenX chemicals charge

Betsy,
Here is the revised draft charge, please look at the changes in 2.

Thanks,
Jamie

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 19, 2020 5:46 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: FOR YOUR REVIEW-Revised GenX chemicals charge

Very good. See what you think of these edits

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, August 19, 2020 10:23 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FOR YOUR REVIEW-Revised GenX chemicals charge
**Importance:** High

Betsy,
We took the first cut at revising the charge based on feedback from Dave and Charlotte. Please let us know what you think. Any word from Deborah on her review of the GenX docs?

Thanks,
Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/9/2020 1:11:10 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX tech edit version of assessment and response to comments

Thanks!

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, September 9, 2020 8:53 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX tech edit version of assessment and response to comments

Hi,

Here are links to the tech edited versions of the assessment and response to comments.

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/13/2020 6:59:16 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: Miller, Gregory shared "Charge Questions for GenX chems EPR2 08_13_2020" with you.

we're in the process of revisiong the charge. this is the working copy

This link only works for the direct recipients of this message.

Charge Questions for GenX chems EPR2 08_13_2020

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/20/2020 10:50:33 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: beck/cpsc/pfas

Extra interest in PFAS isn't going to help GenX across the finish line. I presume CPSC would have a place on the TWG.

https://insideepa.com/tsca-news/beck-pledges-survey-pfas-risks-amid-doubts-her-cpsc-nomination

"Beck said her career has been committed to policies based on "objective and transparent scientific analysis."

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/2/2020 1:43:59 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: charlotte meeting
**Attachments**: FINAL___Peer Review Report_Task 0008_GenX_Draft.docx

It's on page 3-5 in the attached.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, September 2, 2020 9:37 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: charlotte meeting

can you send me the charge from the first peer review?

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, September 02, 2020 9:35 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: charlotte meeting

Here are some additional things I'm planning to refresh my memory on based on the briefing. I'll keep adding as I think of more.

1. Database UF
2. Blake study RfD
3. Results of the prenatal rat screen
4. Progression of liver effects in the mice and the rat (making sure I know the details of each study/have my spreadsheets in order)
5. Details of the chronic rat study
    a. # of deaths, etc
6. Toxicokinetic differences between the mouse and rat (they were questioning using the mouse since it's the more sensitive species)

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, September 02, 2020 8:50 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: charlotte meeting

Can we generate a list? I started but we should flesh out I guess.

1. Database UF
2. Blake study RfD

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, September 02, 2020 8:48 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: charlotte meeting

Id like to get a list together of topics. Ideally I would ask her, but let's try to recall things she brought up at the last meeting.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, September 02, 2020 8:37 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** charlotte meeting

So the meeting with Charlotte got scheduled for next week. Is there anything we should do to prepare?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/16/2020 4:46:49 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX UF section

This is great news!

---

**From:** Lambert, Jason <Lambert.Jason@epa.gov>
**Sent:** Wednesday, September 16, 2020 12:33 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>
**Subject:** GenX UF section

Hello again. I read sections of the GenX draft assessment again. I really like how you all handle the liver issue (e.g., constellation of lesions/effects). Specifically in regards to the application of UFs, I think it is really good. The rationales are all clear to me. I am not sure why anyone has a problem with the UFd as I think the text on pp. 87-89 (of the July 27 version) is very compelling. With all of the unknowns you all lay out for the database, I don't know how anyone could propose/support anything less than a 10.

Jason C. Lambert, PhD, DABT
Senior Science Advisor
Center for Computational Toxicology and Exposure
U.S. Environmental Protection Agency
26 West Martin Luther King Dr.
Cincinnati, OH 45268
(513)-569-7078
lambert.jason@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/24/2020 11:28:07 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: draft GenX chronic HA

No problem. I can make the change.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, September 24, 2020 7:27 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: draft GenX chronic HA

Yes it should be 90%

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, September 24, 2020 6:39 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: draft GenX chronic HA

I think the calculation looks correct, I'm just curious why we are using 95$^{th}$ percentile for DWI? We used 90$^{th}$ for PFOA/PFOS HAs.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, September 23, 2020 11:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** draft GenX chronic HA

Have a look to make sure the calculations work. Used a 95%ile all ages drinking water intake from the Feb 2019 updated EFH Chapter 3 and a 20% RSC. Also included NC's provisional health goal as a reference.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/23/2020 3:43:42 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: draft GenX chronic HA
**Attachments**: DRAFT GenX chronic HA EPA estimate vs NC PHG_9 23 20_DO NOT CITE OR QUOTE.xlsx

Have a look to make sure the calculations work. Used a 95%ile all ages drinking water intake from the Feb 2019 updated EFH Chapter 3 and a 20% RSC. Also included NC's provisional health goal as a reference.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/24/2020 11:50:20 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: ATTN NEEDED: high level bullets for fstrac presentation on Thursday afternoon.

We received the first draft of the NTP report with counting errors in the tables on November 4, 2019. We received the corrected version on December 4, 2019. I think the bullet is correct.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, September 24, 2020 7:46 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: ATTN NEEDED: high level bullets for fstrac presentation on Thursday afternoon.

that's what it says though, 12/4/2019 below.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, September 24, 2020 7:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: ATTN NEEDED: high level bullets for fstrac presentation on Thursday afternoon.

Those dates check out. Maybe one suggestion is that we received the final report from NTP in December 2019, there was some back and forth, but I don't think it's the biggest deal to change that.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, September 24, 2020 7:32 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: ATTN NEEDED: high level bullets for fstrac presentation on Thursday afternoon.
**Importance:** High

Please look at this ASAP, is it correct?

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, September 23, 2020 6:59 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** ATTN NEEDED: high level bullets for fstrac presentation on Thursday afternoon.

Please edit as needed. Will call tomorrow am.

FY2020

- Problem formulation with ACWA for PFAS human health life criteria
- Development of GenX Chemicals Toxicity Values (SOME OF THIS FOR MY BACKGROUND)
  - Public comments began 11/14/18 for 60 d (closed 1/14/19)
  - Resulted in NTP review of pathology slides
    - Slides to NTP July 2019
    - NTP PWG convened 10/2019
    - NTP PWG report received 12/4/2019
    - Briefed OW IO on comments and revised document 8/20

        - Next step peer review
    - Published FRN to seek comment on approaches for determination of HABs events of national significance in fresh waters 10/19
    - Preliminary Regulatory Determination 4 (12/2019)
    - Helped develop the Water Reuse Action Plan (6/2020)
    - Provided toxicity support for drinking water monitoring in Unregulated Contaminant Monitoring Rule (UCMR) 4 and to identify candidate contaminants for UCMR5
    - Provided toxicity assessment to develop a list of potential compounds of emerging concern in drinking water Contaminant Candidate List (CCL5):
    - Updated the FSTRAC charter and discuss solicitation of new members. Hold meetings
    - Develop draft Coliphage Recreational Water Quality Criteria

FY2021

    - Work with FSTRAC to plan a face-to face meeting for members and to update website
    - Publish final GenX toxicity values
    - Evaluate PFOA AND PFOS data to determine adequacy for 304a criteria development
    - External peer-review of draft coliphage criteria Recreational Water Quality Criteria
    - Providing support on the human health effects associated with the contaminants being considered for final Regulatory Determination 4.
    - Providing toxicological input on candidate contaminants for UCMR 5 (finalized 12/2021)
    - Provide toxicological input for development of a list of potential compounds of emerging concern in drinking water (CCL5): draft January 2021.

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/28/2020 7:05:09 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Draft GenX chronic HA
**Attachments**: DRAFT GenX chronic HA EPA estimate vs NC PHG_9 28 20_DO NOT CITE OR QUOTE.xlsx

In the attached you will see the affect of the uncertainty factors on the HA estimates.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/13/2018 10:47:52 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: genX figure from strynar and libelo

Have we seen the figure in this article yet? It's credited to strynar and libelo.
https://cen.acs.org/articles/96/i7/whats-genx-still-doing-in-the-water-downstream-of-a-chemours-plant.html

I haven't had a chance to read the article yet.

Appointment

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 3/15/2018 11:02:47 AM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject:** Skype meeting for GenX Study Discussion (screen sharing)
**Location:** Skype Meeting

**Start:** 3/15/2018 1:30:00 PM
**End:** 3/15/2018 3:30:00 PM
**Show Time As:** Tentative

**Required Attendees:** Strong, Jamie; Jacobs, Brittany

I've never attempted to set up a Skype meeting before, but apparently you can share your screen. In case we want to do this at 9:30, here are the directions how to share screen once you join a skype meeting. Again, I have no idea what I'm doing here.

→ Join Skype Meeting

Trouble Joining? Try Skype Web App

Help

# Share your screen or program

1. At the bottom of the conversation window, click the **Present** (monitor) button.
2. Choose one of the following:

   To share the content on your desktop, click **Present Desktop**.

   **Important:** When sharing your desktop, everyone in the meeting can see your programs, files, and notifications. If you have confidential information or files that you don't want people to see, close them or use **Present Programs** instead.

   To share one or more programs or files, click **Present Programs**, and then select the specific program or file.

3. On the sharing toolbar, on top of the screen, use any of these options:

   Click **Stop Presenting** when you are done sharing your screen.

   Click **Give Control** to share control of your desktop or program with the participants.

   Click the pin to hide the toolbar and have more space. To un-hide the toolbar, move your mouse to the top of the screen. When the sharing toolbar appears, use any of the controls you need or click the pin again to keep the toolbar visible.

**Note:** While you are presenting, your Skype for Business status changes to **Presenting** ( ⊖), and you won't receive instant messages or calls. You can change this setting in the Status options window.

If you want a meeting attendee to share their screen, give them presenter access, so they can use the controls. If they don't use Skype for Business, they can still use **Skype for Business Web App** to present.

https://support.office.com/en-us/article/Share-your-screen-in-Skype-for-Business-2d436dc9-d092-4ef1-83f1-dd9f7a7cd3fc?ui=en-US&rs=en-US&ad=US

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/4/2021 4:37:58 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "Conley et al_2021_GenX_WriteUp" with you.

to talk about later.

This link only works for the direct recipients of this message.

Conley et al_2021_GenX_WriteUp

Open

Microsoft OneDrive

Sender will be notified when you open this link for the first time.

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/7/2018 4:14:30 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: oppt meeting today topics
**Attachments**: GenX Uncertainty Factors 3 7 18.docx

Here's what I came up with as a starting point on the GenX UFs. They are very draft, and I'd like to get your input before we share these with OPPT. But you might want to read them before our 12:30 meeting w/ OPPT since they will inform some of our discussion topics.

Greg

---

**From:** Strong, Jamie
**Sent:** Wednesday, March 7, 2018 9:20 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: oppt meeting today topics

Yup forgot that one.

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, March 7, 2018 9:19 AM
**To:** Strong, Jamie; Miller, Gregory
**Subject:** RE: oppt meeting today topics

I think we should ask them about the status of the study review write up and the physical chemical properties/fate write up

---

**From:** Strong, Jamie
**Sent:** Wednesday, March 07, 2018 9:18 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** oppt meeting today topics

Make sure we bring up using their SRC mission contract and whether we can use it to do a lit flow diagram. I have money to transfer to them.

UF subchronic and UF DB write ups coming for discussion

Slides for ECOS and fed fam to them

anything else?

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/24/2020 12:12:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: draft GenX chronic HA
**Attachments**: DRAFT GenX chronic HA EPA estimate vs NC PHG_9 24 20_DO NOT CITE OR QUOTE.xlsx

Here it is with 90%ile DWI.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, September 24, 2020 7:27 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: draft GenX chronic HA

Yes it should be 90%

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, September 24, 2020 6:39 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: draft GenX chronic HA

I think the calculation looks correct, I'm just curious why we are using 95$^{th}$ percentile for DWI? We used 90$^{th}$ for PFOA/PFOS HAs.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, September 23, 2020 11:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** draft GenX chronic HA

Have a look to make sure the calculations work. Used a 95%ile all ages drinking water intake from the Feb 2019 updated EFH Chapter 3 and a 20% RSC. Also included NC's provisional health goal as a reference.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/15/2018 12:36:09 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Skype meeting for GenX Study Discussion (screen sharing)
**Attachments**: Study Summary gMiller.xlsx

Here is my study summary file. I added 2 new tabs you can cut and paste into the master. I didn't add anything into the "keep an eye out tab". Instead I flagged things of interest in a column on the right.

Study Summary gMiller.xlsx

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

-----Original Appointment-----
**From:** Jacobs, Brittany
**Sent:** Thursday, March 15, 2018 7:31 AM
**To:** Miller, Gregory
**Subject:** Accepted: Skype meeting for GenX Study Discussion (screen sharing)
**When:** Thursday, March 15, 2018 9:30 AM-11:30 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Skype Meeting

I'm sure we can figure this out (hopefully)

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/28/2018 7:44:50 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Food for thought

This doesn't change my thinking on GenX UFs.

---

**From:** Strong, Jamie
**Sent:** Wednesday, March 28, 2018 1:09 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Food for thought

---

**From:** Henry, Tala
**Sent:** Wednesday, March 28, 2018 12:55 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Food for thought

Food for thought when thinking through UCFs for GenX and comparison to NC provisional value

Tala R. Henry, Ph.D.
Director, Risk Assessment Division
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency

T: 202-564-2959
E: henry.tala@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/27/2018 2:48:45 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Assessment Check In @2pm

agree

---

**From:** Strong, Jamie
**Sent:** Tuesday, March 27, 2018 10:48 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Assessment Check In @2pm

Writing!!

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, March 27, 2018 10:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX Assessment Check In @2pm

Do we want to have our check-in meeting today or use it for writing time?

Let me know your thoughts

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/4/2018 2:52:22 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: name

Sounds good to me. No objections.

Greg

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, April 4, 2018 10:51 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: name

I think HFPO dimer acid and/or ammonium salts. We should be specific in the study summaries though and say if it's the acid or ammonium salt.

---

**From:** Strong, Jamie
**Sent:** Wednesday, April 04, 2018 10:47 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: name

So in the text write HFPO dimer acid and ammonium salts or HFPO dimer acid and/or ammonium salts?

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, April 04, 2018 10:46 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: name

I vote for the first one since the studies are only with the ammonium salt

---

**From:** Strong, Jamie
**Sent:** Wednesday, April 04, 2018 10:44 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** name

So we are using this HEXAFLUOROPROPYLENE OXIDE (HFPO) DIMER ACID AND DIMER ACID AMMONIUM SALT OR this HEXAFLUOROPROPYLENE OXIDE (HFPO) DIMER ACID AND SALTS?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/10/2021 3:41:45 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: August 2020 GenX briefing for IO
**Attachments**: OW IO Briefing- GenX chemicals tox assessments update 081220.docx

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/16/2018 4:35:22 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Liguori, Krista [liguori.krista@epa.gov]
**Subject**: RE: GENX ASSIGNMENT

Ok

---

**From:** Strong, Jamie
**Sent:** Monday, April 16, 2018 12:35 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Liguori, Krista <liguori.krista@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX ASSIGNMENT

Greg can you track down OECD and EPA citations? After you figure out the TK section.

Thanks,
Jamie

---

**From:** Jacobs, Brittany
**Sent:** Monday, April 16, 2018 11:56 AM
**To:** Liguori, Krista <liguori.krista@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX ASSIGNMENT

I updated this with notes on the DuPont studies. Most of the DuPont studies on the list are included in the assessment and reference list, but there are a few that need following up.

I'll send Laurence an email about these because they are in the PCHEM section:

- Key Lab, 2010a
- Key Lab, 2010b
- DuPont-1388231-R2009NC031(a)-02
- DuPont-1388231-R2009NC031(s)-02
- DuPont-17437

Not sure about DuPont-24019 (Corrositex® In Vitro Test). I thought Barbara included it in her write ups. I'm not sure if it was taken out for a reason.

I can deal with the other publically available literature citations that are missing once I finish the uncertainty section (there are likely more citations I will add in this section anyway), if someone else can take care of the OECD and missing USEPA citations.

Thanks,
Britt

---

**From:** Liguori, Krista
**Sent:** Monday, April 16, 2018 8:55 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>

**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX ASSIGNMENT

OK, here's the updated list

Krista Liguori, MSPH
ORISE Participant
US Environmental Protection Agency
Office of Water, Office of Science and Technology
Health and Ecological Criteria Division | Human Health Risk Assessment Branch

---

**From:** Strong, Jamie
**Sent:** Friday, April 13, 2018 2:11 PM
**To:** Liguori, Krista <liguori.krista@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: GENX ASSIGNMENT

okay a few ?s

---

**From:** Liguori, Krista
**Sent:** Friday, April 13, 2018 12:33 PM
**To:** Strong, Jamie
**Subject:** RE: GENX ASSIGNMENT

Here is the breakdown of the mismatches attached..

Do you want to have a separate References section for the appendices? That's what we did in the RWQC Review.

Krista Liguori, MSPH
ORISE Participant
US Environmental Protection Agency
Office of Water, Office of Science and Technology
Health and Ecological Criteria Division | Human Health Risk Assessment Branch

---

**From:** Strong, Jamie
**Sent:** Friday, April 13, 2018 11:51 AM
**To:** Liguori, Krista <liguori.krista@epa.gov>
**Subject:** Re: GENX ASSIGNMENT

Yes that's fine.

Sent from my iPhone

On Apr 13, 2018, at 9:49 AM, Liguori, Krista <liguori.krista@epa.gov> wrote:

OK, I can download and do it that way.

Krista Liguori, MSPH
ORISE Participant
US Environmental Protection Agency
Office of Water, Office of Science and Technology
Health and Ecological Criteria Division | Human Health Risk Assessment Branch

---

**From:** Strong, Jamie
**Sent:** Friday, April 13, 2018 9:15 AM
**To:** Liguori, Krista <liguori.krista@epa.gov>
**Subject:** GENX ASSIGNMENT

Krista,

I need you to do a reference cross check for me. I need you to verify the citations in the text have a reference in the reference list, if not note that. If a citation is in reference list and not in text note that too. Can you do this outside of sharepoint? Also, another sweep of acronyms would be helpful.

Thanks,

Jamie

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/18/2018 6:29:42 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Strong, Jamie has shared 'ECOS FED PART GENX PFBS PRESENTATION 2'

I made some edits to the slides. I was a little more protective about what we are sharing at this stage. I put the "**PROCESS FOR DERIVATION OF REFERENCE DOSE"** section in future tense since we've made the decision not to present the results of our analysis until after internal/external PR. I'm thinking that in this presentation, we share the NOAELs from our table and sketch out how those NOAELs might be turned into a RfD while avoiding an in depth description of the UFs, BMD modeling, allometric scaling, and critical effect selection until after the internal and external peer reviews.

Greg

**From:** Strong, Jamie [mailto:no-reply@sharepointonline.com]
**Sent:** Wednesday, April 18, 2018 11:29 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Strong, Jamie has shared 'ECOS FED PART GENX PFBS PRESENTATION 2'

So here is what I have, please edit and add!

Jamie

Open ECOS FED PART GENX PFBS PRESENTATION 2.pptx

See more related to Strong, Jamie in Delve.

Get the SharePoint mobile app!

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/23/2018 7:53:33 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: genx update

I got all of Joyce's edits and comments (except for p values and the up/down arrows) into the SharePoint draft. Tomorrow I'm going to start accepting her redline edits and resolving any comments that I can. I'm hoping that accepting the edits will go pretty quickly. Then I'm moving on to the OPPT comments we've received so far.

Greg

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/6/2020 5:49:36 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: Talk about GenX (and PFBA)
**Location**: Microsoft Teams Meeting

**Start**: 10/8/2020 6:00:00 PM
**End**: 10/8/2020 7:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Strong, Jamie; Jacobs, Brittany

Wanted to get this on the calendar. Jamie, I see that you have lots of tentative meetings on your calendar. Feel free to offer another time for this meeting if you need to.

---

## Join Microsoft Teams Meeting

Learn more about Teams | Meeting options

By participating in EPA hosted virtual meetings and events, you are consenting to abide by the agency's terms of use. In addition, you acknowledge that content you post may be collected and used in support of FOIA and eDiscovery activities.

---

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/16/2018 6:10:47 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Liguori, Krista [liguori.krista@epa.gov]
**Subject**: RE: GENX ASSIGNMENT

TK issue and gender susceptibility have been handled.

I'll hunt down the OECD and EPA citations now.

---

**From:** Strong, Jamie
**Sent:** Monday, April 16, 2018 12:35 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Liguori, Krista <liguori.krista@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX ASSIGNMENT

Greg can you track down OECD and EPA citations? After you figure out the TK section.

Thanks,
Jamie

---

**From:** Jacobs, Brittany
**Sent:** Monday, April 16, 2018 11:56 AM
**To:** Liguori, Krista <liguori.krista@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX ASSIGNMENT

I updated this with notes on the DuPont studies. Most of the DuPont studies on the list are included in the assessment and reference list, but there are a few that need following up.

I'll send Laurence an email about these because they are in the PCHEM section:

- Key Lab, 2010a
- Key Lab, 2010b
- DuPont-1388231-R2009NC031(a)-02
- DuPont-1388231-R2009NC031(s)-02
- DuPont-17437

Not sure about DuPont-24019 (Corrositex® In Vitro Test). I thought Barbara included it in her write ups. I'm not sure if it was taken out for a reason.

I can deal with the other publically available literature citations that are missing once I finish the uncertainty section (there are likely more citations I will add in this section anyway), if someone else can take care of the OECD and missing USEPA citations.

Thanks,
Britt

---

**From:** Liguori, Krista
**Sent:** Monday, April 16, 2018 8:55 AM

**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GENX ASSIGNMENT

OK, here's the updated list

Krista Liguori, MSPH
ORISE Participant
US Environmental Protection Agency
Office of Water, Office of Science and Technology
Health and Ecological Criteria Division | Human Health Risk Assessment Branch

---

**From:** Strong, Jamie
**Sent:** Friday, April 13, 2018 2:11 PM
**To:** Liguori, Krista <liguori.krista@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: GENX ASSIGNMENT

okay a few ?s

---

**From:** Liguori, Krista
**Sent:** Friday, April 13, 2018 12:33 PM
**To:** Strong, Jamie
**Subject:** RE: GENX ASSIGNMENT

Here is the breakdown of the mismatches attached..

Do you want to have a separate References section for the appendices? That's what we did in the RWQC Review.

Krista Liguori, MSPH
ORISE Participant
US Environmental Protection Agency
Office of Water, Office of Science and Technology
Health and Ecological Criteria Division | Human Health Risk Assessment Branch

---

**From:** Strong, Jamie
**Sent:** Friday, April 13, 2018 11:51 AM
**To:** Liguori, Krista <liguori.krista@epa.gov>
**Subject:** Re: GENX ASSIGNMENT

Yes that's fine.

Sent from my iPhone

On Apr 13, 2018, at 9:49 AM, Liguori, Krista <liguori.krista@epa.gov> wrote:

OK, I can download and do it that way.

Krista Liguori, MSPH
ORISE Participant
US Environmental Protection Agency
Office of Water, Office of Science and Technology
Health and Ecological Criteria Division | Human Health Risk Assessment Branch

---

**From:** Strong, Jamie
**Sent:** Friday, April 13, 2018 9:15 AM
**To:** Liguori, Krista <liguori.krista@epa.gov>
**Subject:** GENX ASSIGNMENT

Krista,

I need you to do a reference cross check for me. I need you to verify the citations in the text have a reference in the reference list, if not note that. If a citation is in reference list and not in text note that too. Can you do this outside of sharepoint? Also, another sweep of acronyms would be helpful.

Thanks,

Jamie

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/25/2018 4:07:44 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Use of GenX
**Attachments**: Use of GenX_2018-02-28_v3.TH ___ Section 1.2 .docx; draft review process information __ Section 1_1.docx

Yes. These are the 2 docs used as the basis of Sections 1.1 and 1.2. Tala saw the draft for Section 1.2. I guess she's seeing the draft for Section 1.1 for the first time now. I'm thinking we just cut and paste in her edits for Section 1.1.

Greg

**From:** Jacobs, Brittany
**Sent:** Wednesday, April 25, 2018 12:00 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Use of GenX

I can't find the email for the original history and use, I will keep looking but I did download it (attached). The version they sent us has the initials TH at the end which makes me think Tala saw it.

**From:** Miller, Gregory
**Sent:** Wednesday, April 25, 2018 11:58 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: P-chem and fate

Thanks for these!

**From:** Jacobs, Brittany
**Sent:** Wednesday, April 25, 2018 11:55 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: P-chem and fate

Original PCHEM and fate

**From:** Strong, Jamie
**Sent:** Wednesday, April 11, 2018 12:32 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: P-chem and fate

**From:** Aubee, Catherine
**Sent:** Wednesday, April 11, 2018 12:31 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Henry, Tala <Henry.Tala@epa.gov>; Eisenreich, Karen <Eisenreich.Karen@epa.gov>; Libelo, Laurence <Libelo.Laurence@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>;

Fehrenbacher, Cathy <Fehrenbacher.Cathy@epa.gov>
**Subject:** P-chem and fate

Hi Jamie,

Please see the write-up, attached. Let us know if you have questions or need clarification on anything. I flagged one topic for discussion re: whether or not to include information from a specific source.

Best,
Catherine

**********

Catherine Aubee
Chief, Invertebrate/Vertebrate Branch 1 (IVB1)
OPP Registration Division

Email: aubee.catherine@epa.gov
Desk: (703) 347-8029
Mobile: (571) 317-4402
Office: PYS 7651

By Mail:
U.S. Environmental Protection Agency
1200 Pennsylvania Ave NW
Mail Code: 7505P
Washington, DC 20460

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/26/2018 3:50:39 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: House Energy and Commerce Subcommittee on Environment Hearing - Administrator Pruitt testimony on GenX

Rep Hudson (NC) asks Administrator Pruitt specifically about GenX
Pruitt says he's aware of issues in NC
Pruitt says: GenX toxicity assessment will be ready "by the summer" (direct quote)
Additonal standards to be set on PFAS in the future
Makes clear to Rep Hudson that EPA is working with NC and other states
Rep Hudson asks if Chemours complied with the consent order. Pruitt punted on this and said would have to check with staff.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/17/2021 6:02:46 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: GenX tech edit version of assessment and response to comments

<!--[if lte mso 15 || CheckWebRef]-->

Miller, Gregory has shared OneDrive for Business files with you. To view them, click the links below.

DRAFT FINAL GenX Chemicals Toxicity Assessment_Tech Edit_7.27.20.docx

GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020.docx

<!--[endif]-->

Ok. So I think this is the most recent GenX Response to comment document. But I'm getting an error when I try to open the file. I'm going to keep searching for this filename. I'm going to search the Sharepoint site we were using but is there any chance this is a file that was on your onedrive?

The tox assessment that is also attached here isn't the most recent.

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, September 9, 2020 8:53 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX tech edit version of assessment and response to comments

Hi,

Here are links to the tech edited versions of the assessment and response to comments.

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/15/2018 5:29:53 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Draft GenX chemicals toxicity values for agency review

I'm trying to extract the pages for these 2 evaluations into 1 file. Hold on.

---

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:22 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Can someone look at eval of our principal study compared to chronic study?

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, May 15, 2018 1:07 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Just took a quick glance and it looks like it's their (OPPTs) entire systematic review process outlined. The first 50 plus pages goes over process and the study-specific evaluations don't start until the last 30ish pages.

---

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:03 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Draft GenX chemicals toxicity values for agency review

Oh my…its very long. I wonder if its consistent with language in our lit eval section.

---

**From:** Camacho, Iris
**Sent:** Tuesday, May 15, 2018 12:48 PM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Henry, Tala <Henry.Tala@epa.gov>; Benson, Amy <Benson.Amy@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Fehrenbacher, Cathy <Fehrenbacher.Cathy@epa.gov>; Selby-Mohamadu, Yvette <Selby-Mohamadu.Yvette@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Attached is OPPT's Appendix B supporting the GenX assessment. Let me know if you have any questions.

**********
Iris A. Camacho, Ph.D.
Branch Chief, Assessment Branch 1
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
William Jefferson Clinton Building East, 6308-A
Washington, DC 20460
Phone: 202-564-1229
Work hours: 8:00 am – 4:30 pm
Work cell phone: 202-304-8648

Telework phone: 301-977-3667 or 301-613-5215
Email: camacho.iris@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/22/2018 3:54:19 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: Administrator's PFAS op-ed in Detroit Free Press

https://www.freep.com/story/opinion/contributors/2018/05/22/pfas-epa/630512002/

"EPA is also taking action to develop health toxicity values for GenX and PFBS, two additional PFAS chemicals."

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/29/2018 5:59:18 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: change key study to critical study in doc

I'm on it.

---

**From:** Strong, Jamie
**Sent:** Tuesday, May 29, 2018 1:57 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** change key study to critical study in doc

Please change key study to critical study in the genx doc.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/31/2018 2:18:43 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX - Agency comment update

Ha. Can I call you?

---

**From:** Strong, Jamie
**Sent:** Thursday, May 31, 2018 10:18 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX - Agency comment update

And you are awesome and thank you.

---

**From:** Jacobs, Brittany
**Sent:** Thursday, May 31, 2018 10:17 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX - Agency comment update

Way to go Greg!!

---

**From:** Miller, Gregory
**Sent:** Thursday, May 31, 2018 10:11 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX - Agency comment update

I've looked at all the comments in detail for R2, R3, R4, R5, R8, OP, OAR, OCSPP, and OCHP. I addressed the technical and editorial comments where I could and entered all remaining substantive edits into our working draft for consideration by the group. Each change/comment is tagged with the originating program office. I'm still working through the comments from ORD and OLEM.

I've also made some comments in the submitted comment documents. I uploaded them in to SharePoint so you have access should you need it. Anything with strikethrough text has been processed by either responding, entering the comment into our sharepoint draft, or dismissal as something we're not going to address.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/4/2018 1:12:36 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: ORD comments on History, Uses, Occurence, P-chem, Fate, and Toxicokinetics
**Attachments**: ORD Gen X consolidated comments for OPPT.DOCX; DRAFT AGENCY Tox Assessment for GenX Chemicals_Sec 1 and 2 for OPPT 06-4-18.docx

Please see ORD comments highlighted in yellow covering Sections 1.0 to 2.3.6. Other comments from program offices are included in the attached draft Tox Assessment.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/4/2018 1:36:35 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: ORD comments on History, Uses, Occurence, P-chem, Fate, and Toxicokinetics
**Attachments**: DRAFT AGENCY Tox Assessment for GenX Chemicals_Sec 1 and 2 for OPPT 06-4-18.docx; ORD Gen X consolidated comments for OPPT.DOCX

Not much difference from what I sent before. Nobody sent a redline markup of the Appendix B document that was sent out separately. The main thrust of the Appendix B comments was that the content should be better integrated into the main body of the document. Please see attached.

---

**From:** Strong, Jamie
**Sent:** Monday, June 4, 2018 9:23 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: ORD comments on History, Uses, Occurence, P-chem, Fate, and Toxicokinetics

Tala wants it all.

---

**From:** Miller, Gregory
**Sent:** Monday, June 04, 2018 9:21 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: ORD comments on History, Uses, Occurence, P-chem, Fate, and Toxicokinetics

I'll have to re-do it to include App B. I thought this was going to Chris B only. Let me resend.

---

**From:** Strong, Jamie
**Sent:** Monday, June 4, 2018 9:20 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: ORD comments on History, Uses, Occurence, P-chem, Fate, and Toxicokinetics

Nothing on App B?

---

**From:** Miller, Gregory
**Sent:** Monday, June 04, 2018 9:13 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** ORD comments on History, Uses, Occurence, P-chem, Fate, and Toxicokinetics

Please see ORD comments highlighted in yellow covering Sections 1.0 to 2.3.6. Other comments from program offices are included in the attached draft Tox Assessment.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/5/2018 5:48:35 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: old spreadsheet
**Attachments**: GenX RfD w BW3_4 v2_6_18.xlsx

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/12/2018 5:33:14 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: charge
**Attachments**: GenX PFBS_External Peer Review_charge questions_06 12 18 gMiller.docx

See if you like the minor edit I made. I had to read the existing wording twice before I understood that we weren't applying all of the UFs.

---

**From:** Strong, Jamie
**Sent:** Tuesday, June 12, 2018 1:17 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** charge

Can you two take a look?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/20/2018 6:11:06 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Revised GenX Document

They didn't add the section numbers back :(

---

**From:** Strong, Jamie
**Sent:** Wednesday, June 20, 2018 1:52 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Revised GenX Document

Can one of you do a sweep through?

---

**From:** Akhter, Shamima
**Sent:** Wednesday, June 20, 2018 1:24 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: Revised GenX Document

Hi Jamie, TT has provided the revised GenX document (attached) and with a few comments.

Thanks,
Shamima

---

**From:** Mosso, Dacia [mailto:Dacia.Mosso@tetratech.com]
**Sent:** Wednesday, June 20, 2018 1:16 PM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>
**Cc:** Susan Lanberg <susan.lanberg@tetratech.com>; John Hochheimer <john.hochheimer@tetratech.com>
**Subject:** Revised GenX Document

Hi Shamima,

Attached is the revised GenX document. We inserted and formatted Appendix B, and did a spell check on the whole document. Please note that we left a few comment bubbles for you. There were two places with incomplete sentences. The third comment bubble discusses recommendations related to references.

Please let me know if you need anything else.

Thanks!
Dacia

---

**Dacia Mosso** | Associate Director of Environmental Sciences
Direct: 703.385.1437 | Receptionist: 703.385.6000 x1437 | Fax: 703.385.6007
dacia.mosso@tetratech.com

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Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/7/2020 11:25:20 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: Talk about GenX (and PFBA)
**Location**: Microsoft Teams Meeting

**Start**: 10/8/2020 5:00:00 PM
**End**: 10/8/2020 6:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Strong, Jamie; Jacobs, Brittany

Wanted to get this on the calendar. Jamie, I see that you have lots of tentative meetings on your calendar. Feel free to offer another time for this meeting if you need to.

---

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---

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 6/20/2018 7:37:56 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** RE: charge with pfbs cut out
**Attachments:** GenX_External Peer Review_charge questions_06 20 18 FINAL with references.docx

Here you go. W/ cancer guidelines ref.

---

**From:** Strong, Jamie
**Sent:** Wednesday, June 20, 2018 3:35 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: charge with pfbs cut out

No attachement...can you add this and send?

---

**From:** Miller, Gregory
**Sent:** Wednesday, June 20, 2018 3:34 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: charge with pfbs cut out

Here's the charge with references added. I also added a reference to the BMD Tech Guidance. You might also consider adding a cancer guidelines reference to question 7. If you like that idea, here's the ref to cut and paste in.

USEPA (U.S. Environmental Protection Agency). 2005. *Guidelines for Carcinogen Risk Assessment*. EPA/630/P-03/001B. USEPA, Risk Assessment Forum, Washington, DC. Accessed May 2018. https://www.epa.gov/risk/guidelines-carcinogen-risk-assessment.

---

**From:** Strong, Jamie
**Sent:** Wednesday, June 20, 2018 2:42 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** charge with pfbs cut out

Please take a quick look. We will get doc back from TT with section numbers today. Need to look at that TK sentence and add purity sentences per Tala info.

Then we are done.

If we can get it to ERG tomorrow awesome.

Jamie

**Jamie B. Strong** | Chief, Human Health Risk Assessment Branch
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/21/2018 5:27:11 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: transmission of EPA GenX assessment and draft charge for peer review

Definitely an enjoyable project and an enjoyable team to work with! Fingers crossed we can make it down the home stretch unscathed!

---

**From:** Jacobs, Brittany
**Sent:** Thursday, June 21, 2018 1:04 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: transmission of EPA GenX assessment and draft charge for peer review

It has been a really great team experience. Thanks for leading us!

---

**From:** Strong, Jamie
**Sent:** Thursday, June 21, 2018 12:56 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: transmission of EPA GenX assessment and draft charge for peer review

I am so unbelievably proud of this effort. It's not been easy and at times really frustrating, but it is a great document. And it's been a wonderful example of a team effort. Thank you both.

---

**From:** Laurie Waite [mailto:Laurie.Waite@erg.com]
**Sent:** Thursday, June 21, 2018 12:21 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** RE: transmission of EPA GenX assessment and draft charge for peer review

Hi Jamie,

GenX and Charge received. I should be able to get this out today to begin the review.

Regards,
Laurie

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, June 21, 2018 12:14 PM
**To:** Laurie Waite <Laurie.Waite@erg.com>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** transmission of EPA GenX assessment and draft charge for peer review
**Importance:** High

Laurie,
Please find attached EPA's Human Health Toxicity Value assessment for GenX chemicals for review by the expert panel. Also attached is the charge for GenX chemicals. The PFBS document and charge will follow next week. Please let

me know if you need anything further or have any questions.

Thank you,
Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/27/2018 5:58:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: we got comments from R2

We're good. No misfiled comments that I can find.

---

**From:** Strong, Jamie
**Sent:** Wednesday, June 27, 2018 1:41 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: we got comments from R2

Go for it

---

**From:** Miller, Gregory
**Sent:** Wednesday, June 27, 2018 1:40 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: we got comments from R2

Now I'm paranoid, should we check the PFBS comment sharepoint for GenX comments?

---

**From:** Strong, Jamie
**Sent:** Wednesday, June 27, 2018 1:38 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: we got comments from R2

I just sent them to samantha

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, June 27, 2018 1:37 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: we got comments from R2

Mark sent specific comments that were mixed in with the GenX comments, so maybe the just didn't see them

---

**From:** Miller, Gregory
**Sent:** Wednesday, June 27, 2018 1:37 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** we got comments from R2

We got comments from
R2
R3
R4
R5
R8

R10

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/19/2018 7:13:15 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
**Attachments**: OW-13-GENX in NC_BLJ gMiller.docx

Looks good. Just some minor edits. Check your edit at the end of the second bullet. The deletion you added doesn't work in that sentence as worded.

OW-13-GENX in NC_BLJ gMiller.d...

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Jacobs, Brittany
**Sent:** Thursday, July 19, 2018 2:55 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23

Hey Greg,

I just edited the GenX fact sheet if you want to work off of my edited version.

Britt

<< File: OW-13-GENX in NC_BLJ.DOCX >> _____
**From:** Strong, Jamie
**Sent:** Thursday, July 19, 2018 12:34 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Donohue, Joyce <Donohue.Joyce@epa.gov>
**Subject:** FW: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
**Importance:** High

Joyce, please look at the PFOA and PFOS fact sheet below.

Britt and/or Greg, please look at GenX.

Due to me by 10am Monday. Sorry!

---

**From:** Flaherty, Colleen
**Sent:** Thursday, July 19, 2018 12:28 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
**Importance:** High

Can you have someone take a look at the fact sheets embedded below and update if necessary?

- GenX in Cape Fear (not sure if we developed this or R4??)
- PFOA/PFOS in drinking water (OGWDW lead)
- HABS (OGWDW lead)

---

**From:** Crawford, Tiffany
**Sent:** Thursday, July 19, 2018 11:37 AM
**To:** Reed, Khesha <Reed.Khesha@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Kochis, Daniel <Kochis.daniel@epa.gov>
**Cc:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Lape, Jeff <lape.jeff@epa.gov>; Ortiz, Agnes <Ortiz.Agnes@epa.gov>
**Subject:** ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
**Importance:** High

Hello All –

I received this request for revised one-pagers on the following OST-related topics in preparation for the Administrator's hearing with the Senate EPW in early August (1st or 2nd tentatively):

- Steam Electric
- Fish Advice
- GenX in Cape Fear
- PFOA/PFOS in drinking water (OGWDW lead – FYI.)
- HABS (OGWDW lead – FYI)

I have attached copies of these one-pagers (last updated in April 2018) below. Based on Ann's email below, these may have been prepared through your budget folks previously as RMS, ran the original drill which produced these factsheets. If you are interested in seeing the full list of factsheets requested, the zip file is also attached with the email chain.

**Dan** – Do you have any additional insight on this drill? Do these factsheets represent the full universe of OST factsheets requested for the last budget-related hearing? I'm hoping to avoid any last minute request for updated material next week.

Please review and provide updated factsheets by COB Monday, 7/23.

Reminder: The OW Management Retreat is on Tuesday, so do your best to meet this deadline.

<< File: OW Fact Sheets.zip >> << File: OW-9-FL HHC.docx >> << File: OW-7-Fish Advice.docx >> << File: OW-13-GENX in NC.docx >> << File: OW-16-HABs in DW.docx >> << File: OW-26-PFAS.docx >>

Thankl you all!

Tiffany N. Crawford
Special Assistant
US Environmental Protection Agency
Office of Science and Technology
Office of Water

**Other Contact Information:**
**Email:** Crawford.Tiffany@epa.gov
**Office:** (202) 566-2375

---

**From:** Campbell, Ann
**Sent:** Wednesday, July 18, 2018 3:37 PM
**To:** Tiago, Joseph <Tiago.Joseph@epa.gov>; Farris, Erika D. <Farris.Erika@epa.gov>; Crawford, Tiffany <Crawford.Tiffany@epa.gov>; Huber, Patrick <Huber.Patrick@epa.gov>
**Subject:** ACTION: Update OW Fact Sheets for Administrator hearing by 2p 7/24

Aloha friends! Elizabeth's note below is self-explanatory. Please update the attached fact sheets, let's say by COB the 23rd so Lee has a chance to review before the 7/24 deadline. I would add to the direction to identify and prepare and new factsheets on emerging topics (perhaps 404c; not sure we've done one recently) that may be necessary as well.

As an FYA, these may have been prepared through your budget folks previously as RMS, I believe, ran the original drill which produced these factsheets. So, please keep your folks in the loop. Much appreciated.

Ann Campbell
Chief of Staff (acting)
Office of Water

---

**From:** Skane, Elizabeth
**Sent:** Wednesday, July 18, 2018 3:14 PM
**To:** Campbell, Ann <Campbell.Ann@epa.gov>
**Cc:** Klasen, Matthew <Klasen.Matthew@epa.gov>; Borum, Denis <Borum.Denis@epa.gov>; Kaiser, Sven-Erik <Kaiser.Sven-Erik@epa.gov>
**Subject:** Action: Update OW Fact Sheets for Administrator hearing by 2p 7/24

Hi Ann, welcome back! Hope you had a lovely break.

Lest you feel overly relaxed as a lingering effect of your vacation, we have learned the Administrator will likely testify before
Senate EPW on 8/1 or 8/2 on his priorities. OCIR would like to provide him with an updated briefing book. To that end we are requesting an update to the OW fact sheets NLT 2pm Tuesday July 24.

I've attached what we believe to be the universe of OW fact sheets; our team will go through the rest to make sure the set is complete but we wanted to get these out to you ASAP.

<< File: OW-30-Steam Electric.docx >>
Many thanks and again, welcome back!
Elizabeth

**Elizabeth Skane ◆ 202.564.5696**
US Environmental Protection Agency
Office of Congressional Affairs
WJC North 3443S

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/19/2018 7:26:51 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23

Yes. Go for it! Please cc me too

---

**From:** Jacobs, Brittany
**Sent:** Thursday, July 19, 2018 3:22 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23

Thanks for catching, I edited that sentence. Are you alright with me sending to Jamie now?

---

**From:** Miller, Gregory
**Sent:** Thursday, July 19, 2018 3:13 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23

Looks good. Just some minor edits. Check your edit at the end of the second bullet. The deletion you added doesn't work in that sentence as worded.
<< File: OW-13-GENX in NC_BLJ gMiller.docx >>
Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Jacobs, Brittany
**Sent:** Thursday, July 19, 2018 2:55 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23

Hey Greg,

I just edited the GenX fact sheet if you want to work off of my edited version.

Britt

<< File: OW-13-GENX in NC_BLJ.DOCX >> _____

**From:** Strong, Jamie
**Sent:** Thursday, July 19, 2018 12:34 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Donohue, Joyce <Donohue.Joyce@epa.gov>
**Subject:** FW: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
**Importance:** High

Joyce, please look at the PFOA and PFOS fact sheet below.

Britt and/or Greg, please look at GenX.

Due to me by 10am Monday. Sorry!

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**Sent:** Thursday, July 19, 2018 12:28 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
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- PFOA/PFOS in drinking water (OGWDW lead)
- HABS (OGWDW lead)

---

**From:** Crawford, Tiffany
**Sent:** Thursday, July 19, 2018 11:37 AM
**To:** Reed, Khesha <Reed.Khesha@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>; Kochis, Daniel <Kochis.daniel@epa.gov>
**Cc:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Lape, Jeff <lape.jeff@epa.gov>; Ortiz, Agnes <Ortiz.Agnes@epa.gov>
**Subject:** ACTION NEEDED: Update OW Fact Sheets for Administrator hearing by COB 7/23
**Importance:** High

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Thankl you all!

Tiffany N. Crawford
Special Assistant
US Environmental Protection Agency
Office of Science and Technology
Office of Water

**Other Contact Information:**
**Email:** Crawford.Tiffany@epa.gov
**Office:** (202) 566-2375

---

**From:** Campbell, Ann
**Sent:** Wednesday, July 18, 2018 3:37 PM
**To:** Tiago, Joseph <Tiago.Joseph@epa.gov>; Farris, Erika D. <Farris.Erika@epa.gov>; Crawford, Tiffany <Crawford.Tiffany@epa.gov>; Huber, Patrick <Huber.Patrick@epa.gov>
**Subject:** ACTION: Update OW Fact Sheets for Administrator hearing by 2p 7/24

Aloha friends! Elizabeth's note below is self-explanatory. Please update the attached fact sheets, let's say by COB the 23rd so Lee has a chance to review before the 7/24 deadline. I would add to the direction to identify and prepare and new factsheets on emerging topics (perhaps 404c; not sure we've done one recently) that may be necessary as well.

As an FYA, these may have been prepared through your budget folks previously as RMS, I believe, ran the original drill which produced these factsheets. So, please keep your folks in the loop. Much appreciated.

Ann Campbell
Chief of Staff (acting)
Office of Water

---

**From:** Skane, Elizabeth

**Sent:** Wednesday, July 18, 2018 3:14 PM
**To:** Campbell, Ann <Campbell.Ann@epa.gov>
**Cc:** Klasen, Matthew <Klasen.Matthew@epa.gov>; Borum, Denis <Borum.Denis@epa.gov>; Kaiser, Sven-Erik <Kaiser.Sven-Erik@epa.gov>
**Subject:** Action: Update OW Fact Sheets for Administrator hearing by 2p 7/24

Hi Ann, welcome back! Hope you had a lovely break.

Lest you feel overly relaxed as a lingering effect of your vacation, we have learned the Administrator will likely testify before
Senate EPW on 8/1 or 8/2 on his priorities. OCIR would like to provide him with an updated briefing book. To that end we are requesting an update to the OW fact sheets NLT 2pm Tuesday July 24.

I've attached what we believe to be the universe of OW fact sheets; our team will go through the rest to make sure the set is complete but we wanted to get these out to you ASAP.

<< File: OW-30-Steam Electric.docx >>
Many thanks and again, welcome back!
Elizabeth

**Elizabeth Skane** ◆ **202.564.5696**
US Environmental Protection Agency
Office of Congressional Affairs
WJC North 3443S

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/19/2018 6:07:23 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Draft Peer Review Report (partial) for GenX

Phew! My anxiety about the reviewer extension is way down after looking at these comments!

---

**From:** Strong, Jamie
**Sent:** Thursday, July 19, 2018 12:32 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** FW: Draft Peer Review Report (partial) for GenX

Amazing job you two, really really favorable and positive review from 4 out of 5. Impressive.

---

**From:** Laurie Waite [mailto:Laurie.Waite@erg.com]
**Sent:** Thursday, July 19, 2018 11:50 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Harrison, Shirley <Harrison.Shirley@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Jan Connery <Jan.Connery@erg.com>
**Subject:** Draft Peer Review Report (partial) for GenX

Dear Jamie,

Please find attached ERG's draft peer review report of compiled comments for the external peer review of EPA's draft Human Health Toxicity Values for Hexafluoropropylene Oxide (HFPO) Dimer Acid and its Ammonium Salt (GenX Chemicals).

As mentioned, this draft is missing comments from one reviewer, Dr. Angela Slitt. I have discussed the situation with Dr. Slitt and she is finishing up her review of GenX as soon as possible and indicated I should have her comments by tonight or Friday morning. We will then insert her comments and send the completed draft to you on Friday as scheduled.

Please let me know if you have any questions or need any clarifications from reviewers. We will provide a final report for GenX upon your indication that nothing further is needed from reviewers. Thank you!

Regards,
Laurie

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/24/2018 11:57:24 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX peer review

Sounds good!

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, July 24, 2018 7:43 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX peer review

Hi Greg,

Meant to send you an email yesterday afternoon, but I ran out of time. I moved all of the peer review comments into the new report, so we can just work off of that one. I went through the comments and the edits you made in the draft as well. I think it looks good! Today I'm going to focus on going through that PPAR alpha paper and checking the studies for steatosis and anything else we can answer from the commenters.

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/31/2018 5:21:21 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Assessment Check In

Hey, call me for this one. (202) 566-2310

-----Original Appointment-----
**From:** Jacobs, Brittany
**Sent:** Thursday, February 8, 2018 11:11 AM
**To:** Jacobs, Brittany; Donohue, Joyce; Strong, Jamie; Miller, Gregory
**Subject:** GenX Assessment Check In
**When:** Tuesday, July 31, 2018 2:00 PM-3:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest-5231AA/DC-CCW-OST

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/13/2018 4:17:46 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Jacobs, Brittany shared "data calculations" with you.
**Attachments**: draft GenX HA data calculations DO NOT CITE OR QUOTE.XLSX

Here's my version. The math still needs checking. For adults, the L/day and L/kg-day calculations have the same result – which is good.

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, September 11, 2018 8:32 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Jacobs, Brittany shared "data calculations" with you.

Second tab is where I was messing around with HA calculations

This link only works for the direct recipients of this message.

data calculations

Open

Microsoft OneDrive

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 9/13/2018 5:57:29 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject:** White House reviews EPA plans for nonstick compounds

I think this is what Stiven was talking about.

https://www.eenews.net/greenwire/2018/09/13/stories/1060096935

CHEMICALS

## White House reviews EPA plans for nonstick compounds

Ariel Wittenberg, E&E News reporter

Published: Thursday, September 13, 2018

The White House is reviewing draft recommendations for cleanup of PFAS in groundwater. Steve Johnson/Flickr

The White House Office of Information and Regulatory Affairs is reviewing draft cleanup recommendations for a toxic class of nonstick chemicals.

The draft interim recommendations, which went to OIRA in August, are expected to help guide the remediation of several Superfund sites and other areas contaminated by per- and polyfluoroalkyl substances, or PFAS.

"This is the third step of the four-step action plan announced in May," EPA spokeswoman Molly Block said.

Former EPA Administrator Scott Pruitt announced the plan at a May summit regarding the chemicals, which was marred by EPA's initially turning journalists away at the door (***Greenwire***, May 22).

At the meeting, EPA also committed to begin the process of declaring perfluorooctanoic and perfluorooctanesulfonic acids as hazardous substances, which would allow the agency to hold companies liable for polluting lands and waters with them.

The agency is also currently considering whether to set a maximum contaminant level for the chemicals and develop toxicity values for two other types of PFAS, GenX and perfluorobutanesulfonic acid.

Twitter: @arielwittenberg Email: awittenberg@eenews.net

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/30/2018 1:40:31 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: EDF submits extensive comments critical of EPA OPPT's TSCA systematic review document

See this one? I haven't had the chance to read the comments yet but sounds pertinent to our GenX systematic review.

Greg

**From:** EDF Health Blog [mailto:edfhealth@edf.org]
**Sent:** Friday, August 17, 2018 6:03 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** EDF submits extensive comments critical of EPA OPPT's TSCA systematic review document

Is this email not displaying correctly? View it in your browser.

Hi, here's the latest from EDF Health:

## EDF submits extensive comments critical of EPA OPPT's TSCA systematic review document

**By Ryan O'Connell**

Ryan O'Connell is a High Meadows Fellow; Jennifer McPartland, Ph.D., is a Senior Scientist. Last night, Environmental Defense Fund (EDF) submitted critical comments on EPA's Office of Pollution Prevention and Toxics' (OPPT) "systematic review" document that OPPT is using to evaluate chemicals' risks under the Toxic Substances Control Act (TSCA). Systematic review, a hallmark of [...]

## EDF files extensive comments critical of EPA's problem formulations for the first 10 chemicals being reviewed under TSCA

**By Richard Denison**

Richard Denison, Ph.D., is a Lead Senior Scientist. Last night, Environmental Defense Fund (EDF) submitted more than 200 pages of comments providing a detailed critique of each of the "problem formulations" EPA issued in June for the first 10 chemicals in commerce undergoing risk evaluations under the Toxic Substances Control Act (TSCA). EDF also delivered 45,000 […]

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PART 3: EPA rams through its reckless review scheme for new chemicals under TSCA, your health be damned

PART 2: EPA rams through its reckless review scheme for new chemicals under TSCA, your health be damned

Paint-lead hazard standard – A reconsideration

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/19/2018 5:00:50 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: comparing PFOA to GenX-HELP

Yeah. Looks good. Follow up with Joyce on that question.

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, September 19, 2018 12:51 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: comparing PFOA to GenX-HELP

So the only thing I would suggest is to get a little more clarification from Joyce on half-lives:

- Does she agree that the GenX beta half-life is similar between monkeys and rodents and that this differs from PFOA?

---

**From:** Strong, Jamie
**Sent:** Wednesday, September 19, 2018 12:39 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: comparing PFOA to GenX-HELP

Can you all take a look at this too?

---

**From:** Donohue, Joyce
**Sent:** Wednesday, September 19, 2018 12:30 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: comparing PFOA to GenX-HELP

I included PFOS but you can remove it if you only want PFOA

---

**From:** Strong, Jamie
**Sent:** Wednesday, September 19, 2018 11:39 AM
**To:** Donohue, Joyce <Donohue.Joyce@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** comparing PFOA to GenX-HELP
**Importance:** High

Joyce,
Can you please fill out these tables comparing environmental fate and TK issues for GenX and PFOA. Succinct summaries/statements are best. I have to brief Admin Wheeler on Friday and these questions came up previously when we briefed Dave Ross. I need something today if possible.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460

☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/20/2018 2:54:03 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE:

It's a little clumsy but not entirely false. The PR agreed with the use of thyroid as a critical effect, they just didn't say whether it should be the overall RfD or used in a separate developmental RfD.

---

**From:** Strong, Jamie
**Sent:** Thursday, September 20, 2018 10:52 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE:

Thanks, the statement on slide 8 isnt accurate then.

- The peer review comments were very favorable on both PFBS and GenX.
    - Reviewers generally agreed with choice of critical study and effect, BMD modeling, body weight scaling, uncertainty factors and cancer classification.

---

**From:** Jacobs, Brittany
**Sent:** Thursday, September 20, 2018 10:50 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE:

Three of the peer reviewers said they should consider the thyroid effects for the chronic RfD. I don' t think they come out and say use the thyroid data instead of the kidney data, but they make comments like:

- "The selection of the key study by Lieder et al. (2009) and critical effect for the derivation of the subchronic and chronic RfDs for PFBS, as it is justified on p. 81 and p. 84, is highly questionable."
- "Furthermore, effects on thyroid hormonal balance is the most consistent findings supported by several other studies."
- "However, the adverse thyroidal effects from exposure are substantial, and hypothyroidism can arguably be considered also as another critical effect."
- "However, while these selections can be scientifically justified and defended, an argument can also be made for alternatives (i.e., reduced T4 in mice and rats from Feng et al. (2017) and NTP (2018), respectively) that when subjected to BMD modeling, result in lower BMDLs… Clearly, the Agency felt as though peer-review and adequate exposure duration trumped sensitivity, despite NTP's reputation for generating high quality data and reliance on Feng et al. (2017) for developmental RfD derivation. As I am unable to make a reasoned choice between the aforementioned alternatives, I support the Agency's decision."

---

**From:** Strong, Jamie
**Sent:** Thursday, September 20, 2018 10:39 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:**

For pfbs what did the peer reviewers recommend regarding the rfds presented…did they say don't use the kidney rfd as THE rfd use the devel one?

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
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1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/25/2021 2:44:58 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory mentioned you in "GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020".

SharePoint

@

# Miller, Gregory mentioned you

GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020.docx

@ **Miller, Gregory** mentioned you

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/4/2018 4:04:47 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Gen X redline
**Attachments**: transmission of EPA GenX assessment and draft charge for peer review; FW: TD for TT-GenX tech edit; PUBLIC COMMENT DRAFT Human Health Tox Values for GenX Chemicals_08_30_18 REDLINE.DOCX

The attached draft is the redline comparing the 6/21/18 External Peer Review Draft to the revised 8/30/18 Public Comment Draft that we just sent for tech edit. Also attached are the 2 emails that I found these drafts in to be sure that I've compared the correct versions. Let me know if something looks off.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/9/2018 1:32:45 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: example slide deck
**Attachments**: PFOA-PFOS-OW HAs ADMIN BRIEF 030916.ppt

Do you have time to take a first pass through these today and I'll pick up where you leave off tomorrow?

---

**From:** Strong, Jamie
**Sent:** Thursday, August 9, 2018 8:59 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** example slide deck

Brittany and Greg,
Here is the admin brief for PFOA and PFOS. Use this example along with the current slides on GenX to develop a Dave Ross briefing while I am gone (the prebrief is the 6th I see). I think you will need a slide for NC current prelim value and what they are doing. May need to touch base with Beth Dittman (ask Betsy to set this up with her boss) after the meeting the 20th in NC. I'd also include peer review comments overview and approach to revisions.

THANKS!!!

Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/8/2020 6:26:08 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, Gregory shared "Topics of conversation with ORD for GenX UFd 10 8 20" with you.

Here's the document that Miller, Gregory shared with you.

This link only works for the direct recipients of this message.

Topics of conversation with ORD for GenX UFd 10 8 20

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Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/24/2018 4:01:53 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Comments on Comms Materials
**Attachments**: Public Fact Sheet_9.24.18 jbs_blj_gMiller.docx; GenX PFBS Draft Tox Assess_tech fact sheet.9.24.18. jbs_blj_gMiller.docx; PressRelease_GenXPFBStoxicityassessments_9.24.18_blj_gMiller.docx

Comments attached.

**From:** Strong, Jamie
**Sent:** Monday, September 24, 2018 10:34 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Comments on Comms Materials

So they want comments by 1pm today. Send me what you have on both by noon.

Thanks and sorry for short turn around.

**From:** Strong, Jamie
**Sent:** Monday, September 24, 2018 10:16 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Comments on Comms Materials

This one too…its evident these comments are from nancy.

**From:** Strong, Jamie
**Sent:** Monday, September 24, 2018 10:10 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Comments on Comms Materials

My comments

**From:** Strong, Jamie
**Sent:** Monday, September 24, 2018 10:04 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Comments on Comms Materials

Take a look.

**From:** Wadlington, Christina
**Sent:** Monday, September 24, 2018 9:44 AM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Mattas-Curry, Lahne <Mattas-

Curry.Lahne@epa.gov>
**Subject:** Comments on Comms Materials

Morning!

Can you take a look at the attached. This includes edits from OCSPP and OGC. (Note, the engagement one is included for completeness, no comments to address).

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/11/2018 12:37:52 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: All Hands agenda
**Attachments**: GenX OST All Hands.pptx

Here's what I was thinking. My inclination was to stay away from the RfD values at this stage but maybe we should ask Jamie about that. If she wants the RfD in there, we could use the PFAS RfD comparison slide from the meeting with the Administrator. These all come from past presentations. She's asking for a 5-10min presentation so I'm thinking 5 slides tops with the rest for discussion. Thoughts?

---

**From:** Strong, Jamie
**Sent:** Thursday, October 11, 2018 7:41 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: All Hands agenda

That might be nice, don't stress yourselves over this though.

---

**From:** Miller, Gregory
**Sent:** Thursday, October 11, 2018 7:38 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: All Hands agenda

Sure. Powerpoint slides too? Thinking 1 or 2 on background might be helpful.

---

**From:** Strong, Jamie
**Sent:** Thursday, October 11, 2018 7:33 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: All Hands agenda

Can you two be prepared to give an overview of the GenX project at the All Hands on Tuesday? 5-10 minutes. Basically tell the story start to finish. A little about the assessment. All the fun stuff. Sorry I know this is short notice, just got this email yesterday.

---

**From:** Flaherty, Colleen
**Sent:** Wednesday, October 10, 2018 4:09 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Thomas, Dana <Thomas.Dana@epa.gov>; Gallagher, Kathryn <Gallagher.Kathryn@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** All Hands agenda

Is anyone from ERAB or HHRAB giving an update?

DRAFT AGENDA

- HECD Workplan – Betsy
- Budget and travel update – Colleen

- Upcoming paper on the use of seagrasses as an endpoint in estuarine nutrient criteria development – Emily Cira, Knauss Fellow
- HHRAB update?
- ERAB update?

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/18/2018 12:07:25 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]
**Subject**: RE: HHRAB biweekly meetings

Yup. No problem.

---

**From:** Jacobs, Brittany
**Sent:** Thursday, October 18, 2018 7:51 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Harper, Ashley <harper.ashley@epa.gov>
**Subject:** RE: HHRAB biweekly meetings

Sounds good! Excited for the revamp

---

**From:** Strong, Jamie
**Sent:** Thursday, October 18, 2018 7:49 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Harper, Ashley <harper.ashley@epa.gov>
**Subject:** RE: HHRAB biweekly meetings

Britt and Greg-can you go through what you put together for the All Hands on GenX at this meeting? 5-10 minutes

Ashley-hope this works for you to come talk about your effort on putting together fact sheets/comms for all projects

Thanks!!

-----Original Appointment-----
**From:** Strong, Jamie
**Sent:** Thursday, October 18, 2018 7:47 AM
**To:** Strong, Jamie; Jacobs, Brittany; Miller, Gregory; Donohue, Joyce; Soares, Barbara; Nappier, Sharon; Young, Melanie; Liguori, Krista; DAnglada, Lesley; Akhter, Shamima; Ravenscroft, John; Harper, Ashley
**Subject:** HHRAB biweekly meetings
**When:** Wednesday, October 24, 2018 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

I would like to revamp the biweekly meetings for HHRAB. I am moving to a day when everyone is in the office and would like to have more of a formal program. Specifically, I will be talking to individuals about sharing certain projects/issues, experiences at various outside meetings (i.e., SOT), and current topics relevant to HECD. I will still be providing an overview of OST happenings and business type reminders but I would really like to utilize the time better and make the meeting more impactful. I am open to hearing your ideas! Stop by or feel free to bring up at your next general. Thank you for your support!

More to come!

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/10/2021 1:12:27 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: Combined tox study
**Attachments**: FW: Combined tox study

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

-----Original Message-----
From: Flaherty, Colleen <Flaherty.Colleen@epa.gov>
Sent: Wednesday, March 10, 2021 8:10 AM
To: Miller, Gregory <Miller.Gregory@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>
Subject: FW: Combined tox study

Keeping you in the loop.

-----Original Message-----
From: Behl, Betsy <Behl.Betsy@epa.gov>
Sent: Tuesday, March 9, 2021 5:35 PM
To: Conley, Justin <Conley.Justin@epa.gov>
Cc: Flaherty, Colleen <Flaherty.Colleen@epa.gov>
Subject: RE: Combined tox study

Excellent. Many thanks Justin.

The PFOA and PFOS HA recommendations advised people to add together concentrations of these chemicals and compare them to the HA of 70 ppb. That was because the HAs were both based on developmental endpoints and both turned out to be 70 ppb. We are trying to be prepared to address the question of additivity following our update of the PFOA and PFOS toxicity values (anticipated for late summer). Right now it is not clear what the most sensitive endpoints will be, but we would like to be prepared to address the likely real-world question of whether the toxicity is additive. I realize that a mixture of these two chemicals is a limited universe, but it will be an important question for us to address in the near term.

Colleen Flaherty is leading a workgroup to look into this topic. She will give you a call to discuss this further. Thanks so much for your willingness to discuss this and for the poster.

Cheers, Betsy

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division, Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

-----Original Message-----
From: Conley, Justin <Conley.Justin@epa.gov>
Sent: Tuesday, March 9, 2021 3:46 PM
To: Behl, Betsy <Behl.Betsy@epa.gov>
Subject: RE: Combined tox study

Hi Betsy,

Good to hear from you and thanks for remembering my talk. We have done some mixtures experiments with GenX, Nafion byproduct 2, and PFOS and find at least dose additive effects on pup survival and potentially greater than additive effects on pup body weight, but we are still analyzing samples from those studies for various other endpoints so the work is on-going and results are preliminary.

Attached is a copy of a poster of this work for this year's SOT meeting that begins next week.

We have done very little work with PFOA at the moment, but plan to incorporate it into future PFAS work with more complex mixtures than the 3 chemical design we used initially.

I'd be more than happy to talk with you about any of this work or how it may relate to PFOA and PFOS toxicity values if that would be helpful.

Cheers,

Justin Conley
Reproductive Systems Biologist
U.S. Environmental Protection Agency
ORD | CPHEA | PHITD | RDTB
Research Triangle Park, NC
919-541-3326 (office)
606-571-5315 (cell)

-----Original Message-----
From: Behl, Betsy <Behl.Betsy@epa.gov>
Sent: Tuesday, March 9, 2021 3:23 PM
To: Conley, Justin <Conley.Justin@epa.gov>
Subject: Combined tox study

Greetings Justin,
You gave a talk a few months ago at an ECOS meeting about an analysis you did of the combined tox of GenX and adona (I think it was adona). We are updating toxicity values for PFOA and PFOS and I was wondering if you may have done a similar analysis.

Please let me know, thanks, Betsy

Sent from my iPhone

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/8/2018 4:05:31 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]

**Subject**: FW: Internal Q and As GenX
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 11/8/2018 4:00:00 PM
**End**: 11/8/2018 5:00:00 PM
**Show Time As**: Tentative

Call in number?

Or call me 202-566-2310

-----Original Appointment-----
**From:** Strong, Jamie
**Sent:** Thursday, November 8, 2018 7:38 AM
**To:** Strong, Jamie; Jacobs, Brittany; Miller, Gregory
**Subject:** Internal Q and As GenX
**When:** Thursday, November 8, 2018 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231L/DC-CCW-OST

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 11/20/2018 7:53:03 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject:** Miller, Gregory shared "draft GenX HA data calculations DO NOT CITE OR QUOTE" with you.

Here's the document that Miller, Gregory shared with you.

This link only works for the direct recipients of this message.

draft GenX HA data calculations DO NOT CITE OR QUOTE

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/29/2018 3:15:10 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Akhter, Shamima [Akhter.Shamima@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Presentation Slides_Special FSTRAC Webinar_Nov 28, 2018
**Attachments**: FSTRAC Briefing on GenX Chemicals PFBS Toxicity Assessments 11-28-18.pdf

Here is the pdf version of yesterday's presentation. Good job everybody!

Greg Miller, Senior Environmental Health Scientist

Team Lead, Human Health Risk Assessment Branch

Office of Science and Technology, Health and Ecological Criteria Division

US Environmental Protection Agency, Office of Water

1200 Pennsylvania Ave, NW (MC 4304T)

Washington, DC 20460

phone: (202) 566-2310

---

**From:** Strong, Jamie
**Sent:** Thursday, November 29, 2018 10:10 AM
**To:** Akhter, Shamima <Akhter.Shamima@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>
**Subject:** RE: Presentation Slides_Special FSTRAC Webinar_Nov 28, 2018

You have the slides already, they have not changed.

---

**From:** Akhter, Shamima
**Sent:** Thursday, November 29, 2018 10:10 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Presentation Slides_Special FSTRAC Webinar_Nov 28, 2018

All,

Thank you for giving such an interesting presentation to the FSTRAC members yesterday.

Several FSTRAC members have expressed to see the slides. Please provide me your presentation slides at your earliest convenience so that we can post a PDF version to the FSTRAC share point site.

Thanks,

Shamima

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/4/2019 6:48:04 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Link to G: GenX Chem Public Comments

G:\OSTSHARE\PFAS\GenX Chemicals\Public Comments

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/13/2019 1:12:26 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: genx public comments on G:

G:\OSTSHARE\PFAS\GenX Chemicals\Public Comments

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/20/2019 7:05:34 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: pfas fact sheet plan?

I didn't have anything major to add. Just corrected a reference that seemed to confuse the GenX/PFAS fact sheet with the PFOA/PFOS HA fact sheet.

Yes. Lots on PFOA/PFOS.

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, February 20, 2019 2:00 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: pfas fact sheet plan?

I just worked through the Q&A and made some edits. There are lots of questions of the PFOA/PFOS HA so I think it'll be worth you taking a look. They had a question about how do we know that the 70PPT for PFAS is safe (lol).

---

**From:** Strong, Jamie
**Sent:** Wednesday, February 20, 2019 1:14 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: pfas fact sheet plan?

Heard. I will take a look and convey this to Christina. Can you take a pass at the Q&A?

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, February 20, 2019 1:10 PM
**To:** Miller, Gregory; Strong, Jamie
**Subject:** RE: pfas fact sheet plan?

I'm finished too. Thanks for adding the additional detail, Greg. I also agree the old one is better and think that these factsheets should be internal only.

---

**From:** Miller, Gregory
**Sent:** Wednesday, February 20, 2019 12:30 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** RE: pfas fact sheet plan?

I'm finished editing the fact sheet. I still think the old one is better.

**From:** Strong, Jamie
**Sent:** Wednesday, February 20, 2019 12:12 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: pfas fact sheet plan?

I don't know, per usual not much info or time was given. And duh I am an idiot.

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, February 20, 2019 12:02 PM
**To:** Strong, Jamie; Miller, Gregory
**Subject:** RE: pfas fact sheet plan?

We are on sharepoint so we won't be duplicating. These factsheets aren't going to be publicly release right? Just for purposes of the hearing?

---

**From:** Strong, Jamie
**Sent:** Wednesday, February 20, 2019 11:58 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** Re: pfas fact sheet plan?

So Christina just told me she started with this and trimmed it down. I agree its current state is awful and we are creating work but here we are. I don't know the best approach. My suggestion is to take what she has and correct it. Make sure you and Brittany aren't duplicating each other.

---

**From:** Miller, Gregory
**Sent:** Wednesday, February 20, 2019 11:46 AM
**To:** Jacobs, Brittany; Strong, Jamie
**Subject:** pfas fact sheet plan?

What's the strategy here? I'm currently correcting wrong information in the fact sheet. But maybe we should be starting with the old fact sheet (attached) and add in any new information from the draft that Christina sent. Then trim whatever we can to slim it down. I am not really happy with doing the same task twice. There was a reason that the original fact sheet took the shape it did.

Thoughts?

---

**From:** Wadlington, Christina
**Sent:** Wednesday, February 20, 2019 11:02 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Flaherty, Colleen

<Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Wadlington, Christina shared "Q-A_PFAS_2.20.19_Hearing" with you.

Yes, just did. We took the fact sheet and just weaned it down a bit so it's easier to read. Happy to adjust as needed.

---

**From:** Strong, Jamie
**Sent:** Wednesday, February 20, 2019 11:01 AM
**To:** Wadlington, Christina <Wadlington.Christina@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: Wadlington, Christina shared "Q-A_PFAS_2.20.19_Hearing" with you.

Also please provide Brittany and Greg access to the fact sheet. Question, why are we doing a new fact sheet for GenX and PFBS, why not use the one we have?

---

**From:** Wadlington, Christina
**Sent:** Wednesday, February 20, 2019 10:59 AM
**To:** Strong, Jamie; Jacobs, Brittany; Flaherty, Colleen; Miller, Gregory
**Subject:** Wadlington, Christina shared "Q-A_PFAS_2.20.19_Hearing" with you.

Here's the document that Wadlington, Christina shared with you.

This link only works for the direct recipients of this message.

Q-A_PFAS_2.20.19_Hearing

Open

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/20/2019 4:46:18 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: pfas fact sheet plan?
**Attachments**: FINAL factsheet_pfbs-genx-toxicity_values_11.14.2018.pdf

What's the strategy here? I'm currently correcting wrong information in the fact sheet. But maybe we should be starting with the old fact sheet (attached) and add in any new information from the draft that Christina sent. Then trim whatever we can to slim it down. I am not really happy with doing the same task twice. There was a reason that the original fact sheet took the shape it did.

Thoughts?

---

**From:** Wadlington, Christina
**Sent:** Wednesday, February 20, 2019 11:02 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Wadlington, Christina shared "Q-A_PFAS_2.20.19_Hearing" with you.

Yes, just did. We took the fact sheet and just weaned it down a bit so it's easier to read. Happy to adjust as needed.

---

**From:** Strong, Jamie
**Sent:** Wednesday, February 20, 2019 11:01 AM
**To:** Wadlington, Christina <Wadlington.Christina@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: Wadlington, Christina shared "Q-A_PFAS_2.20.19_Hearing" with you.

Also please provide Brittany and Greg access to the fact sheet. Question, why are we doing a new fact sheet for GenX and PFBS, why not use the one we have?

---

**From:** Wadlington, Christina
**Sent:** Wednesday, February 20, 2019 10:59 AM
**To:** Strong, Jamie; Jacobs, Brittany; Flaherty, Colleen; Miller, Gregory
**Subject:** Wadlington, Christina shared "Q-A_PFAS_2.20.19_Hearing" with you.

Here's the document that Wadlington, Christina shared with you.

This link only works for the direct recipients of this message.

Q-A_PFAS_2.20.19_Hearing

Open

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/28/2019 3:39:01 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX manuscript accepted for publication
**Attachments**: FW: OW REVIEW: DUE DATE IS 7/19 : ORD ADVANCE NOTIFICATION - ORD-026448 Conley et al. Adverse maternal, fetal, and neonatal effects of GenX from oral gestational exposure in Sprague Dawley rats

Yes. Last July.

Greg

---

**From:** Strong, Jamie
**Sent:** Thursday, February 28, 2019 10:34 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: GenX manuscript accepted for publication

Remind me, this came through the formal review process right?

---

**From:** Conley, Justin
**Sent:** Thursday, February 28, 2019 10:32 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Gray, Earl <Gray.Earl@epa.gov>
**Subject:** GenX manuscript accepted for publication

Just a heads up. Our GenX manuscript that you previously reviewed has been accepted for publication in Environmental Health Perspectives and is now citable as "in press" with DOI 10.1289/EHP4372

Attached is a pdf copy of the accepted manuscript.

Thanks for your valuable comments and edits on the earlier draft.

Cheers,

Justin Conley
Postdoctoral Toxicologist
U.S. Environmental Protection Agency
ORD/NHEERL/TAD
Reproductive Toxicology Branch
Research Triangle Park, NC
(919) 541-3326

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/30/2019 3:34:18 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: one pager based on your paper
**Attachments**: Options for the GenX Chemicals Assessment 042919 jbs gMiller.docx

Added my edits. Britt is going to have a go next.

Greg

---

**From:** Strong, Jamie
**Sent:** Tuesday, April 30, 2019 7:49 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: one pager based on your paper
**Importance:** High

Here are my edits and comments (some to you and some to BB).

---

**From:** Strong, Jamie
**Sent:** Tuesday, April 30, 2019 7:26 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: one pager based on your paper

Ack, I know you all are at WQS. I do need help with this…BB has made some changes and has some questions (one is a comment I made previously)

---

**From:** Strong, Jamie
**Sent:** Tuesday, April 30, 2019 7:20 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: one pager based on your paper
**Importance:** High

Please send me any edits today.

---

**From:** Behl, Betsy
**Sent:** Monday, April 29, 2019 4:31 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** one pager based on your paper

Still may be too detailed for Dave. Tell me what you think, especially how I characterized the timeline.

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone:  202.566.0788
room 5233H

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/7/2018 1:07:05 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: [GenX] OW/OPPT methods discussion

**Sensitivity**: Private

Will do. We'll see if they are in the office today. There are lots of people in the office for OST for some reason. I was hoping for a quiet day ☹

Greg

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, February 07, 2018 8:05 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: [GenX] OW/OPPT methods discussion
**Sensitivity:** Private

Hey Greg,

If you have to go get physical copies of everything, could you scan them in and send them to me when you have the time? I'm teleworking today and it would be the perfect time to get through the material.

Thanks!
Britt

---

**From:** Miller, Gregory
**Sent:** Wednesday, February 7, 2018 8:00:32 AM
**To:** Benson, Amy; Brinkerhoff, Chris
**Cc:** Jacobs, Brittany; Donohue, Joyce
**Subject:** FW: [GenX] OW/OPPT methods discussion

Amy and Chris,
Let me know a good time to come over and pick up the materials. I'm also going to need a reminder on where you guys sit.

Thanks!

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Strong, Jamie
**Sent:** Wednesday, February 07, 2018 7:46 AM

**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Donohue, Joyce <Donohue.Joyce@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** Fwd: [GenX] OW/OPPT methods discussion
**Sensitivity:** Private

Please arrange to get assessment ASAP.

Sent from my iPhone

Begin forwarded message:

> **From:** "Aubee, Catherine" <Aubee.Catherine@epa.gov>
> **Date:** February 7, 2018 at 7:45:20 AM EST
> **To:** "Behl, Betsy" <Behl.Betsy@epa.gov>
> **Cc:** "Strong, Jamie" <Strong.Jamie@epa.gov>, "Henry, Tala" <Henry.Tala@epa.gov>, "Behrsing, Tracy" <behrsing.tracy@epa.gov>, "Brinkerhoff, Chris" <Brinkerhoff.Chris@epa.gov>, "Benson, Amy" <Benson.Amy@epa.gov>
> **Subject: Re: [GenX] OW/OPPT methods discussion**
>
> Hi Betsy,
>
> We are happy to share the latest draft now. Your staff can reach out to Chris or Amy today to make arrangements. Tracy is teleworking and shared the following information on study availability:
>
> "It would be helpful to let OW know that non-CBI full study reports for the repeated dose tox studies, PK studies, etc. have already been posted online by NC so they are free to review them in detail at this point. They are located at: http://edocs.deq.nc.gov/WaterResources/Browse.aspx?dbid=0&startid=624254&row=1&cr=1 There is at least 1 error on this website, as the folder for the 2 year study contains the 28-d mouse study. However, Joyce already has a copy of the full study report for the 2 year study so OW can use that for review."
>
> Best,
> Catherine

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/8/2018 3:09:51 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]
**CC**: Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: NC DEQ GenX pdfs

I downloaded the files from the NC DEQ website. There are 93 files. Not clear how many overlap with the 55 Dupont SharePoint pdfs that OPPT shared with us. I put the NC files here:
G:\OSTSHARE\HECD\Human Health Risk Assessment Branch - HHRAB\Chemours Health Studies from NC DEQ Website

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/20/2018 7:56:34 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: powerpoint material
**Attachments**: draft Content for GenX Background slides 2 20 18.docx

Here's what I pulled out of the OPPT report. Some of it maybe be useful for plugging in to the powerpoint. I think the background info should be sufficient to run by OPPT for approval.

I skipped over the toxicokinetics material for now. I didn't want to get too far into the weeds on the first pass through this material.

I suspect you'll want to reorganize the tox study summary info according to the conceptual model. That sounds good to me.

Work in progress...

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/6/2018 6:29:38 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: GenX & BW3/4
**Attachments**: bw34 example_IRIS BAP p 154.pdf; bw34 final.pdf; GenX RfD w BW3_4 v2_6_18.xlsx

Here's a spreadsheet to play with. And supporting docs to explain what's going on. Applying the interspecies scaling drives the RfD lower.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/12/2018 3:22:40 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: GenX & BW3/4
**Attachments**: bw34 example_IRIS BAP p 154.pdf; bw34 final.pdf; GenX RfD w BW3_4 v2_6_18.xlsx

Revised BW3/4 spreadsheet attached. Let me know if you find any errors.

---

**From:** Miller, Gregory
**Sent:** Tuesday, February 06, 2018 1:30 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX & BW3/4

Here's a spreadsheet to play with. And supporting docs to explain what's going on. Applying the interspecies scaling drives the RfD lower.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/28/2018 7:16:41 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: genX - CompTox Chemistry Dashboard

https://comptox.epa.gov/dashboard/dsstoxdb/results?utf8=%E2%9C%93&search=62037-80-3

https://comptox.epa.gov/dashboard/dsstoxdb/results?utf8=%E2%9C%93&search=13252-13-6

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/14/2020 2:29:21 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Checking-in: Peer Review of GenX

I can.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, October 14, 2020 10:28 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Checking-in: Peer Review of GenX

Can you two talk right now?

---

**From:** Strong, Jamie
**Sent:** Wednesday, October 14, 2020 10:17 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Checking-in: Peer Review of GenX

take a look

---

**From:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Sent:** Wednesday, October 14, 2020 9:53 AM
**To:** Ohanian, Edward <Ohanian.Edward@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** FW: Checking-in: Peer Review of GenX

We should discuss this review.

-Deborah

---

**From:** Bertrand, Charlotte <Bertrand.Charlotte@epa.gov>
**Sent:** Wednesday, October 14, 2020 9:36 AM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Aguirre, Janita <Aguirre.Janita@epa.gov>
**Subject:** RE: Checking-in: Peer Review of GenX

Deborah –

Thanks for the email. I have asked OCSPP to have their scientists review some of the key changes that OW is considering for the final GENX assessment. Attached is their review, you should see a meeting on your calendars this week with OCSPP to discuss their concerns. While I still would like us to move forward in 2021, it may be prudent to extend the contract period of performance. What do you think?

Best,
Charlotte

**From:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Sent:** Friday, October 02, 2020 4:28 PM
**To:** Bertrand, Charlotte <Bertrand.Charlotte@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** Checking-in: Peer Review of GenX

Charlotte,

I wanted to let you know that the peer review for GenX was scheduled to begin on 25 SEP. Since we have not been given the approval to start the peer review, my staff sent a note to the contractor who runs the external peer review to inform them that the peer review of GenX would be delayed. They informed the contractor that the earliest possible date for the peer review to begin is the end of October.

**Key Considerations**

- We need to plan for a 4-week engagement with the TWG (same as for PFB) before it goes to the peer review.
- Peer reviewers have been identified and were all available to begin the review of the GenX assessment this week. We will have to confirm their availability when we have greater clarity about the schedule.
- The period of performance on the peer review contract ends in December. We can extend that into 2021, but we need to initiate paperwork for the extension sometime in November.

I am checking to see if you have any direction that will allow us to clarify the peer review schedule?

Thanks
Deborah

---

Deborah G. Nagle, Director
Office of Science and Technology
1200 Pennsylvania Ave, NW
Washington, DC 20460
Tel: (202) 564-1185

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/14/2020 3:05:46 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Miller, Gregory shared "OPPT Review of OW GenX Document_10-02-2020" with you.

Ok. I'll see what I can do.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, October 14, 2020 11:05 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "OPPT Review of OW GenX Document_10-02-2020" with you.

lets get rid of all the front matter stuff. I tried but cant get rid of section breaks.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, October 14, 2020 10:54 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Miller, Gregory shared "OPPT Review of OW GenX Document_10-02-2020" with you.

there were some errors in the pdf to word conversion. I'm trying to correct them as i find them.

This link only works for the direct recipients of this message.

OPPT Review of OW GenX Document_10-02-2020

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/14/2020 3:20:25 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: revised charge questions for GenX peer review #2

Yes. That's the latest version I have. We made some changes after talking with Ed

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, October 14, 2020 11:15 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: revised charge questions for GenX peer review #2

is this it?

---

**From:** Strong, Jamie
**Sent:** Wednesday, September 02, 2020 2:28 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: revised charge questions for GenX peer review #2

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, September 02, 2020 2:26 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** revised charge questions for GenX peer review #2

For your review and in preparation for next Thursday's discussion with Charlotte.

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/7/2021 1:07:04 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: genx schedule
**Attachments**: GenX chemicals tox assessments draft PROPOSED SCHEDULE 4-6-21.docx

Fyi. May change some based on our conversation tomorrow with Deborah.

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, April 7, 2021 8:59 AM
**To:** Snowden, Belinda <snowden.belinda@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** genx schedule

Please attach to meeting invite

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/26/2021 3:44:25 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller.Gregory@epa.gov
**Subject**: GenX Tox Review and OPPT/OPP comments from previous administration

Just got out of the management meeting with Betsy and she agrees that we are not required to address these comments because they were not resubmitted or referenced to by OCSPP during the Agency Review that ended on 4/23/21.

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From:** Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 5/19/2021 5:18:25 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC:** Euling, Susan [Euling.Susan@epa.gov]
**BCC:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject:** FW: GenX Review: Individual Comments
**Attachments:** Chou_Comments for GenX.docx; Faustman_Comments for GenX.docx; Kamendulis_Comments for GenX.docx; Leung_Comments for GenX.docx; Salmon_Comments for GenX.docx; Warren_Comments for GenX.docx

Just waiting on Dr. Slitt's comments. Below is the list of final selected reviewers that we received concurrence on from Jamie.

| | |
|---|---|
| Karen Chou, Ph.D.; Associate Professor, Michigan State University | Reproductive/developmental toxicology, risk assessment |
| *Elaine M. Faustman, Ph.D., DABT; Professor, University of Washington | Reproductive and developmental toxicology and risk assessment methodologies |
| Lisa Kamendulis, PH.D.; Associate Professor, Department of Environmental Health, Indiana University | Liver toxicology, risk assessment, dose-response, PFOA research |
| Angela Leung, M.D.; Health Sciences Clinical Assistant Professor of Medicine, David Geffen School of Medicine; University of California Los Angeles | Thyroid expertise |
| *Andrew Salmon, Ph.D.; Retired, California Environmental Protection Agency | Risk assessment methodologies; some reproductive toxicology |
| Angela Slitt, Ph.D.; Associate Professor, Department of Biomedical and Pharmaceutical Sciences, University of Rhode Island | Liver toxicology, PFOA/PFAS metabolism, some kidney toxicity |
| David "Alan" Warren, Ph.D.; Program Director, Environmental Health Science, University of South Carolina Beaumont | Benchmark-dose modeling, toxicology, risk assessment, hematotoxicity, immunotoxicity |

*new addition

**From:** Shams, Dahnish <Shams.Dahnish@epa.gov>
**Sent:** Wednesday, May 19, 2021 11:13 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** FW: GenX Review: Individual Comments

FYI – Initial set of comments Greg. ERG will compile them all into one report early next week.

- Dahnish

Chemical & Pollutant Assessment Division (CPAD)
Center for Public Health and Environmental Assessment (CPHEA)
Office of Research and Development, U.S. EPA
O: (202) 564-2758

**From:** Laurie Waite <Laurie.Waite@erg.com>
**Sent:** Tuesday, May 18, 2021 5:10 PM

**To:** Shams, Dahnish <Shams.Dahnish@epa.gov>
**Subject:** GenX Review: Individual Comments

Hi Dahnish,

While we await the last reviewer's comments I am passing on the other six sets of comments received so EPA may begin looking at them. Please let me know if you need any clarifications from reviewers. I will pass on the final set once received.

Thanks,
Laurie

^<>^<>^<>^<>^<>^<>^<>^<>^
Laurie Waite, Project Manager
Peer Review Services
Eastern Research Group, Inc.
110 Hartwell Avenue
Lexington, MA 02421
781-674-7362; 978-660-5583 (cell)
Laurie.Waite@erg.com
LinkedIn
Pronouns: she/her/hers

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/20/2021 12:29:11 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Miller, GregoryG shared "GenX chemicals tox assessments draft PROPOSED SCHEDULE 4-6-21b" with you.

# Miller, GregoryG shared a file with you

Here's the GenX schedule that I've been editing as we move through the peer review phase. See the note in blue at the top. OMB's involvement is still unclear at this point.

GenX chemicals tox assessments draft PROPOSED SCHEDULE 4-6-21b

This link only works for the direct recipients of this message.

Open

Microsoft

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Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 4/2/2020 5:42:19 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 1:37 PM:

where have you been working in the GenX doc lately? I just read through Section 7 and made some edits. Jamie has a big comment on Section 7.5 i didn't know what to do with, but Section 7.7 required some editing. check out what i did when you get a chance - the last paragraph in Sec 7.7 in particular.

Jacobs, Brittany 1:38 PM:

I've been back up in the MOA after I finished in section 5

Jacobs, Brittany 1:38 PM:

okay will do

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 4/2/2020 5:36:20 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

**Miller, Gregory 1:36 PM:**

where have you been working in the GenX doc lately? I just read through Section 7 and made some edits. Jamie has a big comment on Section 7.5 i didn't know what to do with, but Section 7.7 required some editing. check out what i did when you get a chance - the last paragraph in Sec 7.7 in particular.

**1:36 PM** The action couldn't be completed. Please try again later.

where have you been working in the GenX doc lately? I just read through Section 7 and made some edits. Jamie has a big comment on Section 7.5 i didn't know what to do with, but Section 7.7 required some editing. check out what i did when you get a chance - the last paragraph in Sec 7.7 in particular.

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 12/3/2020 12:29:37 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 7:10 AM:
i don't really want to ask but how was the GenX meeting yesterday?
Jacobs, Brittany 7:10 AM:
lol
Jacobs, Brittany 7:10 AM:
it wasn't good
Miller, Gregory 7:11 AM:
sigh
Jacobs, Brittany 7:11 AM:
we have a path forward but it isn't a good one and Jamie is not happy at all
Jacobs, Brittany 7:12 AM:
They agreed that there was a difference of opinion and that we need to go to peer review
Jacobs, Brittany 7:12 AM:
however, they basically said we are going to have to do TWO ADDITIONAL peer reviews
Miller, Gregory 7:12 AM:
ha
Jacobs, Brittany 7:13 AM:
the first would be to ask the peer reviewers for their input on the uncertainty factors and they would want us to write up the rationale for the DB UF as a 1,3, and 10
Jacobs, Brittany 7:13 AM:
we said Tala and Todd would have to write up the justification for a 1 because we couldn't
Jacobs, Brittany 7:14 AM:
then we would have to go back to peer review to ask the other questions once we got this info
Miller, Gregory 7:15 AM:
hmm. not good. why couldn't we do the PR all at once with all 3 UF versions?
Jacobs, Brittany 7:15 AM:
and there was some crap about a NODA and letting the public know our charge questions and we may or may not respond to public comment but it got pretty jumbled there
Jacobs, Brittany 7:15 AM:
because charlotte doesn't want the peer reviewers to see our biased assessment essentially
Jacobs, Brittany 7:15 AM:
we would have to write up a different document to support the DB UF charge question
Jacobs, Brittany 7:16 AM:
and I think the other charge questions would require the complete assessment
Jacobs, Brittany 7:17 AM:
like how do you decide if the RfD is good without seeing the entire assessment
Miller, Gregory 7:17 AM:
i don't really get to have an opinion at this point. but you need the whole assessment to understand the whole database in order to judge the database UF
Miller, Gregory 7:17 AM:
not just an excerpted version
Miller, Gregory 7:17 AM:
but whatever
Jacobs, Brittany 7:17 AM:
yeah I was kind of surprised of the lack of pushback
Jacobs, Brittany 7:17 AM:
betsy pushed back on suggesting a 1
Jacobs, Brittany 7:17 AM:
but just the whole thing generally

Miller, Gregory 7:18 AM:
i hope they give us adequate time to do the work
Jacobs, Brittany 7:18 AM:
I also neglected to tell them that the peer reviewers have already seen a whole assessment from us
Jacobs, Brittany 7:18 AM:
that these are the same peer reviewers
Jacobs, Brittany 7:19 AM:
after sleeping on it, I think there has to be a way to provide most of the assessment to them
Jacobs, Brittany 7:19 AM:
maybe without the final RfDs
Jacobs, Brittany 7:19 AM:
but like a cutoff point
Miller, Gregory 7:20 AM:
sounds fine to me.
Jacobs, Brittany 7:20 AM:
it's all stupid
Jacobs, Brittany 7:20 AM:
I'm just over it
Miller, Gregory 7:21 AM:
yeah. the fact that UFd 1 is not in the mix is the give away that this is a screwed up situation.
Miller, Gregory 7:21 AM:
now in the mix
Jacobs, Brittany 7:21 AM:
but Jamie was very upset, so we will see how it goes...she thinks it's precedent setting/dangerous
Jacobs, Brittany 7:21 AM:
which I get
Jacobs, Brittany 7:21 AM:
I think for us it will be okay because these peer reviewers already thought a 3 was good
Miller, Gregory 7:22 AM:
right. the immediate curiosity is going to be how we got from 3 to 1 and if the rationale is reasonable
Miller, Gregory 7:24 AM:
you know, i don't think this is going to be as hard as i initially thought. we already have 10 written up. the 3 justification won't look much different, the number will just be the different. 1 is going to be the hard one to write and we're not writing it.

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 4/8/2020 12:35:15 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 8:23 AM:

i started reading the doc from the top with "fresh eyes" with track changes off. In section 2.3.3, should we also be mentioning maternal-fetal transfer in Conley? The conley writeup in section 4.5 says "In the third block, fetal plasma was collected for determining HFPO dimer acid ammonium salt concentrations."

Miller, Gregory 8:26 AM:

never mind, i see it's included now

Miller, Gregory 8:28 AM:

i tweaked the intro sentence in 2.3.3 to let the reader know that multiple studies showing fetal transfer would be discussed in the section.

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 4/8/2020 12:56:10 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 8:23 AM:

i started reading the doc from the top with "fresh eyes" with track changes off. In section 2.3.3, should we also be mentioning maternal-fetal transfer in Conley? The conley writeup in section 4.5 says "In the third block, fetal plasma was collected for determining HFPO dimer acid ammonium salt concentrations."

Miller, Gregory 8:26 AM:

never mind, i see it's included now

Miller, Gregory 8:28 AM:

i tweaked the intro sentence in 2.3.3 to let the reader know that multiple studies showing fetal transfer would be discussed in the section.

Jacobs, Brittany 8:44 AM:

sounds good thanks

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 5/18/2020 4:09:52 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 12:03 PM:

how do you want to handle the PFBS charge? it looks like for a good amount of it, we can just change PFBS to GenX. should i get started on that or have you already? i can post it on sharepoint or whatever

Jacobs, Brittany 12:06 PM:

I haven't started it yet. I'm trying to get some things together for the DBP project, so if you have some time to get that started, that'll be great!

Miller, Gregory 12:07 PM:

ok. i'll get going on it

Miller, Gregory 12:07 PM:

i'll share it from one drive

Jacobs, Brittany 12:07 PM:

sounds good, thanks!

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 1/12/2021 4:44:00 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 9:25 AM:

i'm working on the syr4 chemical history tables. In the "RfD or CSF" column, do we want the current "RfD or CSF" or the one that was used as the basis of the NPDWR?

Jacobs, Brittany 10:00 AM:

hey greg, have a few meetings this morning but will look into this once those are done

Miller, Gregory 10:00 AM:

k

Jacobs, Brittany 11:23 AM:

can you send me the link to the genx fact sheet? I can't open the one in the email for some reason

Miller, Gregory 11:26 AM:

done

Jacobs, Brittany 11:32 AM:

that worked, thank you!

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 7/30/2020 5:28:57 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 1:14 PM:

what are you thinking for this TWG comms doc? have you edited it at all yet?

Jacobs, Brittany 1:15 PM:

no I am trying to get SYR workplan done so I'm not dealing with it until Monday

Jacobs, Brittany 1:15 PM:

we have until Tuesday now based on Cara's most recent email

Miller, Gregory 1:15 PM:

right. i suppose we should agree internally on our edits before we put them up in the document for all to see

Jacobs, Brittany 1:16 PM:

that sounds like a good plan, I will download it and send out a link and just let Jamie know I will look at it on Monday

Miller, Gregory 1:16 PM:

ok. however, i did just change a reference to "GenX" to "GenX chemicals" ;)

Miller, Gregory 1:16 PM:

i couldn't resist

Jacobs, Brittany 1:16 PM:

lol great, thanks

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 6/10/2020 7:04:48 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 2:44 PM:

have we had a conversation about why we aren't doing molecular weight conversion of GenX dosing when PFBS is?

Miller, Gregory 2:45 PM:
Casey is doing our comments on PFBS and unclear on why they are doing a MW conversion. I'm more concerned about why they are and we aren't.

Jacobs, Brittany 2:50 PM:
i feel like we touched on this but I can't remember the conversation

Jacobs, Brittany 2:51 PM:
i don't think we really talked about it

Miller, Gregory 2:53 PM:
i asked Casey to put together a 1 pager on it.

Miller, Gregory 2:53 PM:
it sounds similar, the acid or the salt disassociating into the ion

Jacobs, Brittany 2:54 PM:
right

Jacobs, Brittany 2:54 PM:
I remember seeing it in their document

Jacobs, Brittany 2:54 PM:
and I feel like they said it's just something they typically do...but yeah, I don't have a strong memory of it

Miller, Gregory 2:55 PM:
well it's not something i typically see and we might get caught up in it if GenX has the same chemistry

Jacobs, Brittany 2:56 PM:
yeah, I mean their draft for public comment had it in there and no one picked up on it, but I agree better to have a conversation about it

Jacobs, Brittany 2:56 PM:
I feel like I have seen that before in their PPRTVs

Jacobs, Brittany 2:56 PM:
but not IRIS docs

Miller, Gregory 2:56 PM:
alright., we'll let Casey tee it up then we can all discuss

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 9/9/2020 12:15:54 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 8:05 AM:

hey. how are you doing? do we have the most recent/tech edited version of the GenX draft up on sharepoint anywhere?

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 9/9/2020 12:38:13 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 8:05 AM:

hey. how are you doing? do we have the most recent/tech edited version of the GenX draft up on sharepoint anywhere?

Jacobs, Brittany 8:25 AM:

Hi I'm okay, how are you doing? There's a lot going on this week and I'm not looking forward to this charlotte meeting

Jacobs, Brittany 8:25 AM:

And I haven't put it up on sharepoint

Miller, Gregory 8:32 AM:

ok. yeah, charlotte. just got off my general with jamie. she's not too enthusiastic about the situation

Miller, Gregory 8:32 AM:

i'm thinking i'm just going to read through our latest draft in preparation but i'm trying to track it down

Miller, Gregory 8:32 AM:

i'll dig through my email. it'd be good to get it up on sharepoint at some point.

Miller, Gregory 8:32 AM:

i'm just paranoid i'll find the wrong version

Miller, Gregory 8:33 AM:

but it probably doesn't matter for the charlotte meeting if i'm a draft version or 2 off

Message

**From**: Strong, Jamie [strong.jamie@epa.gov]
**Sent**: 9/10/2020 7:12:00 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany, Strong, Jamie

Strong, Jamie 1:41 PM:

opening chat

Strong, Jamie 1:41 PM:
you will do great.

Jacobs, Brittany 1:50 PM:
someone else needs to take this about the other chemicals

Strong, Jamie 1:50 PM:
britt will you just walk her through each uf or me?

Miller, Gregory 1:53 PM:
pfbs chronic UFd is 10

Strong, Jamie 1:56 PM:
thanks

Strong, Jamie 2:00 PM:
oh for the love of god

Miller, Gregory 2:09 PM:
send her to table 10 to look at dupont's analysis of 1037

Jacobs, Brittany 2:09 PM:
im going to say it

Miller, Gregory 2:20 PM:
oh please.

Strong, Jamie 2:20 PM:
yup

Jacobs, Brittany 2:23 PM:
lol welp that's not my fault this study rates as high

Strong, Jamie 2:24 PM:
pfoa in humans show issues with bpregnancy. of course they would look for genx.

Miller, Gregory 2:25 PM:
twisted logic

Miller, Gregory 2:26 PM:
. If data on specific life stages or organ systems are unavailable or limited data suggest that availability of more extensive data might decrease the POD, this should be taken into account in assigning a database UF. For example, depending on the database and what is known about the chemical, the lack of a two-generation animal reproductive toxicity

study might be considered a deficiency even if the reference value is based on human data.

Miller, Gregory 2:26 PM:
it's "for example"

Miller, Gregory 2:26 PM:
i don't readi it as a directive

Strong, Jamie 2:26 PM:
speak up

Strong, Jamie 2:28 PM:
does sue show these effects with pfoa?

Jacobs, Brittany 2:28 PM:
yes

Jacobs, Brittany 2:28 PM:
different types of lesions

Strong, Jamie 2:28 PM:
its the freakin placenta the vessel for life

Jacobs, Brittany 2:28 PM:
than GenX

Strong, Jamie 2:28 PM:
its adverse.

Strong, Jamie 2:29 PM:
i dont get her reasoning. we dont know if the pod could be lower because we dont have studies evaluating the dose!!!

Strong, Jamie 2:30 PM:
quality doesnt mean anything here...its what is happening at the low dose.

Strong, Jamie 2:30 PM:
this is crazy

Jacobs, Brittany 2:31 PM:
all we can do is keep stating the facts

Jacobs, Brittany 2:32 PM:
she is saying ignore that the this study doesn't have a NOAEL

Strong, Jamie 2:32 PM:
gotta look at those cvs

Jacobs, Brittany 2:34 PM:
should we say we did this

Strong, Jamie 2:34 PM:
uhhhh

Strong, Jamie 2:34 PM:
let betsy

Strong, Jamie 2:34 PM:
they hate ord

Miller, Gregory 2:34 PM:
biased

Jacobs, Brittany 2:35 PM:

LOL

Strong, Jamie 2:35 PM:
bent

Jacobs, Brittany 2:35 PM:
it doesn't matter what ORD say

Jacobs, Brittany 2:35 PM:
s

Strong, Jamie 2:35 PM:
ITS NOT A CHECKLIST

Strong, Jamie 2:36 PM:
OMG

Strong, Jamie 2:38 PM:
where does it say that a 3 is appropriate?

Jacobs, Brittany 2:38 PM:
okay I have nothing else to say

Strong, Jamie 2:38 PM:
where is this text?

Miller, Gregory 2:39 PM:
send the file. look at db uf

Miller, Gregory 2:39 PM:
i'll start talkikng you jump in

Miller, Gregory 2:39 PM:
text is at the bottom

Miller, Gregory 2:39 PM:
8/17 email britt

Miller, Gregory 2:40 PM:
i can't get a word in

Miller, Gregory 2:40 PM:
:(

Miller, Gregory 2:41 PM:
sorry. good job getting in Jamie

Jacobs, Brittany 2:43 PM:
wtf

Strong, Jamie 2:43 PM:
this is what we just did though?

Strong, Jamie 2:44 PM:
is he saying to present both?

Strong, Jamie 2:45 PM:
where did britt go?

Miller, Gregory 2:45 PM:
shit. she dropped off

Miller, Gregory 2:45 PM:

probably got cut off

Miller, Gregory 2:46 PM:
i think he's saying present the narrative that explains how we started at 3 and moved to 10

Strong, Jamie 2:46 PM:
no.  i am not doing that.

Strong, Jamie 2:47 PM:
fine add a sentence that says prev this was a 3 for the reasons below its now a 10

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 9/23/2020 3:53:31 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

**Jacobs, Brittany 11:52 AM:**

Is something going on with GenX? Just curious about the HA email

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 9/24/2020 1:14:11 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 8:59 AM:

ok. here's a question i should have asked a long time ago. is genx long chain or short chain? I don't think we actually classify it either way. our Section 1.2 defines long chain as 6 or more carbons. GenX has 6 carbons but they're not all in a row. asking because PFBA UFd cites other short chain PFAS in their rationale. I was thinking GenX was short chain but maybe i'm wrong?

Jacobs, Brittany 8:59 AM:
Yeah, I'm not sure

Miller, Gregory 8:59 AM:
the half life makes it act more like a short chain than long chain

Jacobs, Brittany 8:59 AM:
I'm not sure if they are considered long chain if they aren't in a row

Miller, Gregory 9:00 AM:
this just isn't easy is it

Jacobs, Brittany 9:03 AM:
I thought they were considered short chain, but let me check some intro's to some papers and see if I can get a citation for it

Jacobs, Brittany 9:03 AM:
I think they need to be in a row

Miller, Gregory 9:03 AM:
it would be better on the PFBA UFd front if it wasn't short chain

Jacobs, Brittany 9:10 AM:
it only has 5 fluorinated carbons

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 9/24/2020 1:27:07 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 8:59 AM:

ok. here's a question i should have asked a long time ago. is genx long chain or short chain? I don't think we actually classify it either way. our Section 1.2 defines long chain as 6 or more carbons. GenX has 6 carbons but they're not all in a row. asking because PFBA UFd cites other short chain PFAS in their rationale. I was thinking GenX was short chain but maybe i'm wrong?

Jacobs, Brittany 8:59 AM:
Yeah, I'm not sure

Miller, Gregory 8:59 AM:
the half life makes it act more like a short chain than long chain

Jacobs, Brittany 8:59 AM:
I'm not sure if they are considered long chain if they aren't in a row

Miller, Gregory 9:00 AM:
this just isn't easy is it

Jacobs, Brittany 9:03 AM:
I thought they were considered short chain, but let me check some intro's to some papers and see if I can get a citation for it

Jacobs, Brittany 9:03 AM:
I think they need to be in a row

Miller, Gregory 9:03 AM:
it would be better on the PFBA UFd front if it wasn't short chain

Jacobs, Brittany 9:10 AM:
it only has 5 fluorinated carbons

Miller, Gregory 9:19 AM:
so it is short chain by our definition. but not as short as the 4 chain PFAS cited in PFBA's UFd

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 6/24/2021 6:51:49 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

feel free to tell them all about genx too

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 7/13/2021 2:17:53 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i'm going to skip today. i'm invited as optional and i have other work to do. sue seems to have genX under control

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 6/1/2021 2:20:13 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

also, on genX, i have to go back, but there is a way to do a half life conversion instead of BW3/4. but we were missing a piece of the calculation before. this might fill the gap.

Message

**From:** Strong, Jamie [Strong.Jamie@epa.gov]
**Sent:** 6/25/2021 1:30:28 PM
**To:** Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

Hey can you send me what we wrote up at the beginning of the new admin that documented the history of genx? OIG is also interested in our experience, thats why I am being interviewed. Should be BB but whatever.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 5/25/2021 11:27:12 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

you online yet? sue has lots of questions about GenX

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 6/8/2021 6:58:37 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i am confused as hell. i thought i wasn't working on GenX anymore. sue is inviting me to the systematic review meeting

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 7/13/2021 2:19:49 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

situation was that i was on the call. they didn't do a introduction. there was a question on genX (i think) and sue jumped in to answer. she had it under control so i didn't interrupt her.

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 8/2/2021 7:47:21 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

ugh. they say the human half life for genX is 5 days in their table

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 8/2/2021 7:40:38 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

Section 10 summarizes existing information and data on current regulatory and advisory standards, toxicity, bioaccumulation and persistence, and degradation of PFBS, 6:2 FTSA, 6:2 FTOH, and HFPO-DA.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 7/22/2021 5:15:32 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

you ok with the GenX schedule?

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 8/2/2021 3:08:30 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

should i jump over to the GenX NHANES meeting at 11:30?

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 8/2/2021 7:40:10 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

the last sentence in section 3 says go to section 10 for genx tox

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 8/9/2021 7:39:59 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

this should have been done in 2016, but in 2016, we didn't have the GenX example

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/1/2021 3:54:55 PM
**To**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

Hey who was the immuno person in ORD that looked at GenX studies?

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 9/14/2021 1:07:45 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

<!--[if lte mso 15 || CheckWebRef]-->

Comments summary from GenX Agency review 4 23 21.docx
<!--[endif]--> here's what they said generally:

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 9/14/2021 3:56:13 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

do we just have the one genX briefing on the calendar for thursday or are there others that i missed/wasn't invited to?

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/15/2021 11:29:09 AM
**To**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

So excited to see GenX on my calendar...never thought i would say that lol.

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/15/2021 11:48:34 AM
**To**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

i am so proud of genx getting out

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 11/1/2021 2:00:43 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

"The results of this toxicity assessment are a key building block of risk assessments for these GenX chemicals, along with exposure information and other important considerations."

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/25/2021 8:02:00 PM
**To**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

ECOS call is full all because of GenX I bet!

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/5/2021 5:18:58 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

Deborah: Radhika may announce at time of release of GenX that we'll do HAs for GenX and PFBS.

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 10/25/2021 3:20:10 PM
**To**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

inside epa refers to genx as an IRIS assessment.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/25/2021 11:12:06 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

betsy says she want the genX ha to be a tiny document

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/21/2021 11:54:07 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

did we decide to pull the NTP report from the GenX appendix+

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/25/2021 6:06:08 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

https://news.bloomberglaw.com/environment-and-energy/epa-declares-genx-most-toxic-of-forever-chemicals-quartet

Message

**From:** Miller, Gregory [Miller.Gregory@epa.gov]
**Sent:** 2/1/2021 4:36:43 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i wasn't reviewing studies in this level of detail with GenX. i don't really have a clue when it comes to assessing bias. i can follow along and throw in my two cents for some of these questions, but i've never designed a study so i have no intimate knowledge of any of these methods written up in the articles.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/21/2021 12:00:11 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

Hi Greg and Jamie,

The SWG (particularly Christine Cai, Statistician) has completed work requested in emails from Jamie at 12/11/2019 and Greg 01/23/2020. The SWG is somewhat proud to have accomplished additional work beyond what was originally agreed, without requesting a deadline extension. Attached are:

- Word document "CPHEA GenX BMDS Modeling Support Req3 .... As transmitted"
- Modeling files and summary tables in compressed format (i.e. Zip)

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/21/2021 11:55:46 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

is there a hero link for all of the genX lit you can paste here

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 10/25/2021 2:59:24 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i kind of can't believe that GenX is final and on the internet.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/29/2021 3:18:01 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

genx is 3e-6

Message

**From:** Felton, Diana
**Sent:** 9/23/2021 8:29:24 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Small, Matthew [Small.Matthew@epa.gov]; Wilson, Patrick [Wilson.Patrick@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; 8:orgid:0075ea02-ece9-418b-8dcc-5464658530bd

Thanks for the info. Sorry to have to leave early. Also - No genX detected in Hawaii yet although very little monitoring is complete. Only data so far is from fish in nearshore environment and frequently consumed market bought fish. No GenX found in those samples. Ongoing projects looking at nearshore water, drinking water, wastewater, biosolids, landfill leachate, compost in process but no data yet.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/21/2021 11:41:59 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

genx

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/21/2021 11:51:00 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

i'm fixing the slide so it says the 1st and 2nd epr and responses are available at

*https://www.epa.gov/pfas/genx-toxicity-assessments-documents*

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 10/25/2021 2:55:46 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

GenX is live! https://www.epa.gov/chemical-research/human-health-toxicity-assessments-genx-chemicals

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 10/29/2021 3:01:43 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

yes, moving "Toxicokinetic summary" to dose-response would be consistent with the way we presented GenX.

Message

**From**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent**: 11/1/2021 1:45:04 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]

i'm looking at the genx slides now and making a few notes for myself

Message

**From:** Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]
**Sent:** 2/10/2021 8:05:50 PM
**To:** Bradford, Charlotte [Bradford.Charlotte@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Carroll, Gregory [Carroll.Gregory@epa.gov]; Christ, Lisa [Christ.Lisa@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Hautman, Dan [Hautman.Dan@epa.gov]; Wang, Lili [Wang.Lili@epa.gov]; Pollard, Amina [Pollard.Amina@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

- Feedback on TSCA risk assessments
- WHO PFOA/PFOS document review
- Update on GenX  risk assessment

Message

**From:** Miller, Gregory [Miller.Gregory@epa.gov]
**Sent:** 2/19/2021 3:02:22 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i know. but the pfhxa method is full of assumptions too. how do we endorse a set of assumptions in pfhxa and pfba but not in GenX?

Message

**From:** Miller, Gregory [Miller.Gregory@epa.gov]
**Sent:** 2/23/2021 2:40:52 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i'm guessing that you are also having difficulty finding time to review the GenX RTC. we have to get this to betsy before you leave right? when are you gone for good?

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 5/17/2021 6:45:48 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

sue is floating the idea of pulling me off GenX. it makes me sad but i'm listening to her ideas. i'd rather be doing genx than anything else but pulling me off of anything else leaves some giant holes

Message

**From**: Bergeron, Christine [bergeron.christine@epa.gov]
**Sent**: 2/19/2019 8:38:34 PM
**To**: Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: RE: IRIS Systematic Review

Brittany and Barbara,

Thanks for the information! (Kathryn hadn't yet told me about my interest in IRIS' systematic review process, but I am filled in and interested now…haha.)

I'll take a look at the slides (they look familiar from some of the things I have seen from the Community of Practice) and the link and let you know if I have any questions.

Please send any updates along as you learn more!

Thank you for your time,
Christine

---

**From:** Soares, Barbara
**Sent:** Tuesday, February 19, 2019 12:39 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Bergeron, Christine <bergeron.christine@epa.gov>
**Cc:** Lavoie, Emma <Lavoie.Emma@epa.gov>
**Subject:** Re: IRIS Systematic Review

Brittany and Christine,

The powerpoint attached is one of the most useful resources for someone just getting beginning to learn about IRIS' systematic review process. I would also (if you have not yet done so) recommend joining the EPA Systematic Review Community of Practice as they are a good resource for webinars and expertise. Cc'ing Emma Lavoie, who has been very helpful in my exploration of systematic review and the people involved.

Thank you,

Barbara

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, February 19, 2019 12:28:34 PM
**To:** Bergeron, Christine; Soares, Barbara
**Subject:** IRIS Systematic Review

Hi Christine,

Jamie let me know that you are interested in IRIS' systematic review process and to send you any resources I have on their systematic review (attached; and this is a good overview: https://www.epa.gov/iris/basic-information-about-integrated-risk-information-system#process). I am looping in Barbara who has been exploring implementation of systematic review for our branch. Barbara, are there any other resources you found useful for understanding IRIS' process?

I can also show you Distiller (a tool IRIS uses to document the studies they include/exclude in their assessments) and my limited understanding of how that works. If you are interested, let me know and I can set up a time to show you.

I think we will have a better understanding of this process very soon. Some folks from IRIS are helping us run the GenX chemicals literature through the IRIS systematic review process in the next couple of weeks. There are some training videos that IRIS just made, but haven't widely shared. I can see if they will give you access to them. Otherwise, I will keep you up to date on what we learn as we go through this process and pass along anything helpful!

Thanks!
Brittany

Message

**From**: Lavoie, Emma [Lavoie.Emma@epa.gov]
**Sent**: 4/24/2019 8:04:54 PM
**To**: Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Bergeron, Christine [bergeron.christine@epa.gov]
**Subject**: RE: IRIS Systematic Review

Just saw in my inbox that I never replied to this email from sometime ago when I was on annual leave.
What a delightful message. I'm so please that the powerpoint is being used.

Christine, I see that you are attending the SR for exposure science summit tomorrow.
And so, assume you both got added to the SR CoP distribution list? If not, please let me know I need to update the list.

-Emma

Tel: 202 564 7091

---

**From:** Soares, Barbara
**Sent:** Tuesday, February 19, 2019 12:39 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Bergeron, Christine <bergeron.christine@epa.gov>
**Cc:** Lavoie, Emma <Lavoie.Emma@epa.gov>
**Subject:** Re: IRIS Systematic Review

Brittany and Christine,

The powerpoint attached is one of the most useful resources for someone just getting beginning to learn about IRIS' systematic review process. I would also (if you have not yet done so) recommend joining the EPA Systematic Review Community of Practice as they are a good resource for webinars and expertise. Cc'ing Emma Lavoie, who has been very helpful in my exploration of systematic review and the people involved.

Thank you,

Barbara

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, February 19, 2019 12:28:34 PM
**To:** Bergeron, Christine; Soares, Barbara
**Subject:** IRIS Systematic Review

Hi Christine,

Jamie let me know that you are interested in IRIS' systematic review process and to send you any resources I have on their systematic review (attached; and this is a good overview: https://www.epa.gov/iris/basic-information-about-integrated-risk-information-system#process). I am looping in Barbara who has been exploring implementation of systematic review for our branch. Barbara, are there any other resources you found useful for understanding IRIS' process?

I can also show you Distiller (a tool IRIS uses to document the studies they include/exclude in their assessments) and my limited understanding of how that works. If you are interested, let me know and I can set up a time to show you.

I think we will have a better understanding of this process very soon. Some folks from IRIS are helping us run the GenX chemicals literature through the IRIS systematic review process in the next couple of weeks. There are some training videos that IRIS just made, but haven't widely shared. I can see if they will give you access to them. Otherwise, I will keep you up to date on what we learn as we go through this process and pass along anything helpful!

Thanks!
Brittany

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 6/10/2019 3:19:37 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: TD to ICF for help with GenX chemicals systematic review
**Attachments**: TD jbs.docx

A few comments. ICF is coming in cold so I would pull some bkgd from other things we have and lay that out here.

---

**From:** Jacobs, Brittany
**Sent:** Monday, June 10, 2019 10:48 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: TD to ICF for help with GenX chemicals systematic review

Hi Jamie,

I touched base with Shirley about TD format, and she said the TD can be in any format, there are no specifications. I have updated the TD a bit so that it reflects language in the WA. Let me know your thoughts.

Thanks,
Brittany

---

**From:** Jacobs, Brittany
**Sent:** Thursday, June 06, 2019 11:38 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** TD to ICF for help with GenX chemicals systematic review

Hi Jamie,

Attached is a TD for ICF to help me with the next steps of the GenX chemicals systematic review. Let me know if you have any edits/thoughts/etc.

Thanks!
Brittany

Message

**From**: Goldstone, Ali [Ali.Goldstone@icf.com]
**Sent**: 6/20/2019 8:19:55 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Jones, Kaedra [kaedra.jones@icf.com]
**CC**: Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: EPA Distiller account

Yes, will do!

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, June 20, 2019 4:17 PM
**To:** Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Ali,

Can you try reaching out to Evidence Partners' Distiller Support to see if they can make you visible to the ORD account? If they can't, then I can reach out to Corey.

Thanks!
Brittany

**From:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Sent:** Thursday, June 20, 2019 4:14 PM
**To:** Jones, Kaedra <kaedra.jones@icf.com>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Brittany,

To my knowledge, ICF does not have an EPA Distiller admin so I believe the person to contact is Corey Strope, who was our Distiller admin for OPPT. I am also happy to reach out to Evidence Partners' Distiller Support to try to resolve it. So Brittany, just let me know what your preference is!

Thanks,
Ali

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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**From:** Jones, Kaedra
**Sent:** Thursday, June 20, 2019 4:08 PM

**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Subject:** RE: EPA Distiller account

Hi,

All good! I totally understand that there are only a select number of seats…which is why I never had one on some our EPA projects despite helping in other capacities. Priority would be to ensure Ali and our senior-level toxicologist (and maybe one other more junior team member) would have access. My access is not as critical at this time.

Ali – can you think through why you might be "hidden" and how to resolve on our side?

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, June 20, 2019 3:55 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Subject:** RE: EPA Distiller account

Hi Kaedra,

I'll talk to Jamie about getting you an account. We are currently leaching off of ORD for our spots, so I will see what she wants to do.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Thursday, June 20, 2019 3:48 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Ali Goldstone <Ali.Goldstone@icf.com>
**Subject:** EPA Distiller account

Hi Brittany,

Would it be possible to have an EPA Distiller account created for me and then be added to the GenX project? I have used Distiller in the past (and done risk of bias!), but it was for projects with the National Toxicology Program, not our other EPA projects. Ali shared that it might appear as if I do have a "kaedra.jones" account in the system, but that account was for NTP rather than for EPA.

Thanks for any help that you can provide!

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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Message

**From**: Goldstone, Ali [Ali.Goldstone@icf.com]
**Sent**: 6/20/2019 8:33:06 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Jones, Kaedra [kaedra.jones@icf.com]
**CC**: Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: EPA Distiller account

Great, thanks so much! I'll let you know what I hear from them shortly.

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, June 20, 2019 4:32 PM
**To:** Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Sure! It's "GenX NCEA Screen (Feb 2019)"

**From:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Sent:** Thursday, June 20, 2019 4:30 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Brittany,

One more thing, sorry. Could you send me the full name of the Distiller project name for the GenX work? I know their live support staff is going to ask that first!

Thanks,
Ali

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, June 20, 2019 4:17 PM
**To:** Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Ali,

Can you try reaching out to Evidence Partners' Distiller Support to see if they can make you visible to the ORD account? If they can't, then I can reach out to Corey.

Thanks!
Brittany

---

**From:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Sent:** Thursday, June 20, 2019 4:14 PM
**To:** Jones, Kaedra <kaedra.jones@icf.com>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Brittany,

To my knowledge, ICF does not have an EPA Distiller admin so I believe the person to contact is Corey Strope, who was our Distiller admin for OPPT. I am also happy to reach out to Evidence Partners' Distiller Support to try to resolve it. So Brittany, just let me know what your preference is!

Thanks,
Ali

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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---

**From:** Jones, Kaedra
**Sent:** Thursday, June 20, 2019 4:08 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Subject:** RE: EPA Distiller account

Hi,

All good! I totally understand that there are only a select number of seats…which is why I never had one on some our EPA projects despite helping in other capacities. Priority would be to ensure Ali and our senior-level toxicologist (and maybe one other more junior team member) would have access. My access is not as critical at this time.

Ali – can you think through why you might be "hidden" and how to resolve on our side?

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, June 20, 2019 3:55 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Subject:** RE: EPA Distiller account

Hi Kaedra,

I'll talk to Jamie about getting you an account. We are currently leaching off of ORD for our spots, so I will see what she wants to do.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Thursday, June 20, 2019 3:48 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Ali Goldstone <Ali.Goldstone@icf.com>
**Subject:** EPA Distiller account

Hi Brittany,

Would it be possible to have an EPA Distiller account created for me and then be added to the GenX project? I have used Distiller in the past (and done risk of bias!), but it was for projects with the National Toxicology Program, not our other EPA projects. Ali shared that it might appear as if I do have a "kaedra.jones" account in the system, but that account was for NTP rather than for EPA.

Thanks for any help that you can provide!

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 6/24/2019 1:21:03 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Foster, Caroline [Caroline.Foster@icf.com]; Ali Goldstone [Ali.Goldstone@icf.com]
**Subject**: HECD WA 2-16: TD-1 Kickoff Meeting Notes
**Attachments**: HECD WA 2-16 TD-1 Kickoff Notes_6.20.19.docx

Good morning,

Please find attached notes from our kick off meeting last Thursday, June 20th. At the bottom of the notes is a list of action items. Many of these are in progress since our kick off meeting. Thanks for helping push forward the process for getting ICF access to the GenX project in Distiller.

Please keep us posted on any decisions following your meeting with Jamie. In the interim, we will begin work on the TD-1 plan and estimated level of effort and use those decisions to finalize some of our assumptions in that TD plan.

We are all looking forward to working on this project! Thank you for including us in this effort!

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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Message

**From**: Goldstone, Ali [Ali.Goldstone@icf.com]
**Sent**: 6/20/2019 9:24:51 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Jones, Kaedra [kaedra.jones@icf.com]
**CC**: Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: EPA Distiller account

We totally understand. No worries!

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, June 20, 2019 5:23 PM
**To:** Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Okay got it, I think I'll have to talk to management about this. We haven't been working with Corey on GenX stuff and I can imagine him being worried about NCEA looking at OPPT literature. It's annoying, I know, but everyone has just been super sensitive about the ORD and OPPT systematic review processes. I'll let you know what I hear! Sorry I can't get this fixed quickly.

**From:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Sent:** Thursday, June 20, 2019 4:44 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Brittany,

Based on my exchange with Distiller Support, the reason I'm not appearing is because my EPA Distiller Admin (Corey Strope) is not on the project. To resolve the issue, apparently he'll first need to be added to the project and then you or Kris will need to request that he add me to the project as well.

Hope that makes (some) sense! ☺

Thanks!
Ali

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, June 20, 2019 4:32 PM

**To:** Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Sure! It's "GenX NCEA Screen (Feb 2019)"

---

**From:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Sent:** Thursday, June 20, 2019 4:30 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Brittany,

One more thing, sorry. Could you send me the full name of the Distiller project name for the GenX work? I know their live support staff is going to ask that first!

Thanks,
Ali

**ALI GOLDSTONE, MPH** | Lead Epidemiologist | +1.703.225.2306 | ali.goldstone@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, June 20, 2019 4:17 PM
**To:** Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Ali,

Can you try reaching out to Evidence Partners' Distiller Support to see if they can make you visible to the ORD account? If they can't, then I can reach out to Corey.

Thanks!
Brittany

---

**From:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Sent:** Thursday, June 20, 2019 4:14 PM
**To:** Jones, Kaedra <kaedra.jones@icf.com>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: EPA Distiller account

Hi Brittany,

To my knowledge, ICF does not have an EPA Distiller admin so I believe the person to contact is Corey Strope, who was our Distiller admin for OPPT. I am also happy to reach out to Evidence Partners' Distiller Support to try to resolve it. So Brittany, just let me know what your preference is!

Thanks,
Ali

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---

**From:** Jones, Kaedra
**Sent:** Thursday, June 20, 2019 4:08 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Subject:** RE: EPA Distiller account

Hi,

All good! I totally understand that there are only a select number of seats...which is why I never had one on some our EPA projects despite helping in other capacities. Priority would be to ensure Ali and our senior-level toxicologist (and maybe one other more junior team member) would have access. My access is not as critical at this time.

Ali – can you think through why you might be "hidden" and how to resolve on our side?

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, June 20, 2019 3:55 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Goldstone, Ali <Ali.Goldstone@icf.com>
**Subject:** RE: EPA Distiller account

Hi Kaedra,

I'll talk to Jamie about getting you an account. We are currently leaching off of ORD for our spots, so I will see what she wants to do.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Thursday, June 20, 2019 3:48 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Ali Goldstone <Ali.Goldstone@icf.com>
**Subject:** EPA Distiller account

Hi Brittany,

Would it be possible to have an EPA Distiller account created for me and then be added to the GenX project? I have used Distiller in the past (and done risk of bias!), but it was for projects with the National Toxicology Program, not our other

EPA projects. Ali shared that it might appear as if I do have a "kaedra.jones" account in the system, but that account was for NTP rather than for EPA.

Thanks for any help that you can provide!

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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Message

**From**: Ingle, Brandall [Brandall.Ingle@icf.com]
**Sent**: 6/27/2019 6:22:47 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Foster, Caroline [Caroline.Foster@icf.com]
**CC**: Jones, Kaedra [kaedra.jones@icf.com]; Ali Goldstone [Ali.Goldstone@icf.com]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: HECD WA 2-16 Distiller permissions
**Attachments**: ATT00001.txt

Hello Brittany,

Logged into Distiller and I can see everything now. Thank you!

Thanks!
Brandall

**BRANDALL INGLE, PhD** | Senior Associate | brandall.ingle@icf.com | icf.com
**ICF** | 2635 Meridian Parkway, Suite 200, Durham, NC, USA

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, June 27, 2019 1:54 PM
**To:** Ingle, Brandall <Brandall.Ingle@icf.com>; Foster, Caroline <Caroline.Foster@icf.com>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Goldstone, Ali <Ali.Goldstone@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 2-16 Distiller permissions

Hi Brandall,

I think I just updated your permissions to allow you to do that. Let me know if it doesn't work.

Thanks!
Brittany

---

**From:** Ingle, Brandall <Brandall.Ingle@icf.com>
**Sent:** Thursday, June 27, 2019 1:48 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Foster, Caroline <Caroline.Foster@icf.com>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Ali Goldstone <Ali.Goldstone@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 2-16 Distiller permissions

Hello Brittany,

Thank you for getting me access to the project in Distiller! Right now, I'm set to be part of the project, but can't see any of the forms. Can you please modify my permissions so that I can view and edit the forms? Giving me editing privileges lets me dig into the calculations so that I can do a cross-walk of your weights and descriptions relative to the existing forms in Distiller. If you'd like, I can either provide you with the list of edits or update them directly to match your criteria, as needed.

Thanks!
Brandall

**BRANDALL INGLE, PhD** | Senior Associate | brandall.ingle@icf.com | icf.com
**ICF** | 2635 Meridian Parkway, Suite 200, Durham, NC, USA

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, June 27, 2019 1:34 PM
**To:** Foster, Caroline <Caroline.Foster@icf.com>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Goldstone, Ali <Ali.Goldstone@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: HECD WA 2-16 Distiller permissions

Brandall should have access now. Let me know if you need anything else!

Thanks!
Britt

---

**From:** Foster, Caroline <Caroline.Foster@icf.com>
**Sent:** Thursday, June 27, 2019 1:07 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Ali Goldstone <Ali.Goldstone@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: HECD WA 2-16 Distiller permissions

Brittany,

Great, thanks! Brandall's account already exists under OPPT like Ali's. She'll just need to be added to the project from what I understand.

Caroline

**CAROLINE FOSTER** | Senior Associate | +1.919.923.1657
caroline.foster@icf.com | icf.com
**ICF** | 2635 Meridian Pkwy., Suite 200, Durham, NC 27713 USA

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---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, June 27, 2019 1:04 PM
**To:** Foster, Caroline <Caroline.Foster@icf.com>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Goldstone, Ali <Ali.Goldstone@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 2-16 Distiller permissions

Hi Caroline,

I will work on getting Brandall access. Does Brandall have a Distiller account like Ali's (under OPPT), or will it be a new account?

Thanks,
Brittany

---

**From:** Foster, Caroline <Caroline.Foster@icf.com>
**Sent:** Thursday, June 27, 2019 1:00 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Ali Goldstone <Ali.Goldstone@icf.com>
**Subject:** HECD WA 2-16 Distiller permissions

Hi Brittany,

Could we get Brandall Ingle (username: Brandall.Ingle@icf.com) access to the "GenX NCEA Screen (Feb 2019)" project in Distiller? Brandall will be the one updating the Distiller form for 2-16.

Thank you!
Caroline

**CAROLINE FOSTER** | Senior Associate | +1.919.923.1657
caroline.foster@icf.com | icf.com
**ICF** | 2635 Meridian Pkwy., Suite 200, Durham, NC 27713 USA

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Message

**From**: Reilly, Delaney [Delaney.Reilly@icf.com]
**Sent**: 10/24/2019 1:15:26 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Jones, Kaedra [kaedra.jones@icf.com]; Hartman, Pamela [Pamela.Hartman@icf.com]; Ingle, Brandall [Brandall.Ingle@icf.com]
**Subject**: RE: GenX Heatmap

Hi Brittany,
Pam was able to find a solution! If we add the metric now (at the end) it puts it at the bottom of the heatmap. So I've added the new domain/metric and am updating the reviews now. I'll let you know when I've finished.
Delaney

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, October 23, 2019 4:52 PM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

Hi Delaney,

I finally got some feedback on the heatmap. My boss was hoping to get the overall study metric either at the top or at the bottom of the heatmap. I was curious if you had any success in manipulating the order of the metrics? If you haven't, I think I will reach out to some folks in ORD to see if they know how. I won't talk to them until next week though, so if you have some time to play around with it until then, feel free. As an FYI, I went in and changed the study titles so they match how we reference them in the assessment.

All the best,
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Thursday, October 10, 2019 9:02 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

Great! I'm so glad we were able to get everything working for you. Just let me know of any further changes you or your management would like and I'll be happy to accommodate.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, October 10, 2019 8:50 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

Hi Delaney,

Thanks so much for the update. I finally got a chance to look at the heatmap and it looks great! I am going to schedule some time to chat with my management about it and get their feedback before making any other changes. Thanks for all of the work on this, it is exactly what we were looking for! I will reach back out if we need any edits/changes.

All the best,
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Monday, October 07, 2019 9:59 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** GenX Heatmap

Hi Brittany and Barbara,
The tertiary review of the GenX studies has been completed and I've updated the heatmap in HAWC (both of you are managers in the project/ have full privileges to view and edit everything). One peculiarity I noticed in the heat map was that the order of the metrics changed from the studies to the heatmap but I haven't been successful yet in finding a way to rearrange those. HAWC gives users the capability of determining which metrics are shown in the heatmap but apparently not the order in which they appear. For us that means that the "Overall Score" metric is in the middle of the rest of the metrics. If you'd like I can spend some more time looking into this or trying to find other avenues of changing the order of the data for use in publications but I didn't want to spend too much time on fixing it if you weren't concerned by it.
Let me know if you have any questions or concerns!
Thanks,
Delaney

Message

**From**: Reilly, Delaney [Delaney.Reilly@icf.com]
**Sent**: 10/24/2019 3:28:43 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Jones, Kaedra [kaedra.jones@icf.com]; Hartman, Pamela [Pamela.Hartman@icf.com]; Ingle, Brandall [Brandall.Ingle@icf.com]
**Subject**: RE: GenX Heatmap

Perfect! Thanks, Brittany.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, October 24, 2019 11:20 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

Hi Delaney,

Thanks so much to you and Pam for getting that figured out and updating the heatmap. I think it looks exactly like we wanted it to! I appreciate all of the effort that has gone into this.

All the best,
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Thursday, October 24, 2019 9:30 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

Hi Brittany,
The heat map is updated with the overall study confidence at the bottom of the graphic. The metric creation in HAWC gives the option to select if the domain is the overall score but I found out that just bolds the field on the heatmap (rather than reordering). I left this selected, so the overall score is bolded currently. If you'd rather it not be there is a check box in the domain that is easy to toggle on/off.
To get the overall study confidence at the bottom I created a new (duplicate) domain/metric of the overall study confidence and just copied all of the information down for each of the reviews. Then, in the visualization I opted not to display the old overall study confidence metric. So that data is still duplicated in the evaluations, but not in the heat map.
Let me know if you have any questions or other requests.
Thanks,
Delaney

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, October 23, 2019 4:52 PM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
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All the best,
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**Sent:** Thursday, October 10, 2019 9:02 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

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**Sent:** Thursday, October 10, 2019 8:50 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** RE: GenX Heatmap

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**Sent:** Monday, October 07, 2019 9:59 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Hartman, Pamela <Pamela.Hartman@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>
**Subject:** GenX Heatmap

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the order of the data for use in publications but I didn't want to spend too much time on fixing it if you weren't concerned by it.
Let me know if you have any questions or concerns!
Thanks,
Delaney

Message

**From**: Greene, Sophie [greene.sophie@epa.gov]
**Sent**: 11/25/2019 2:49:13 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: HECD RSR Study Quality and Title/Abstract Screens Update

Oh good! Thanks for passing that along to her Brittany

---

**From:** Jacobs, Brittany
**Sent:** Monday, November 25, 2019 9:48 AM
**To:** Greene, Sophie <greene.sophie@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** FW: HECD RSR Study Quality and Title/Abstract Screens Update

FYI, Jamie looked over the study quality metrics and thinks it's good

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, November 25, 2019 9:26 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: HECD RSR Study Quality and Title/Abstract Screens Update

I think this looks good and its consistent with GenX.

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**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, November 25, 2019 9:09 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: HECD RSR Study Quality and Title/Abstract Screens Update

Hi Jamie,

Here is the protocol that ICF is planning to use for study quality evaluation. The metrics start on page 3. To identify these targeted metrics, ICF let us know that they compiled all of the study quality evaluation metrics that they have used on other EPA systematic review projects and tried to pick out the most critical metrics for defining study quality (since we need to move fast on CCL). They worked with their senior toxicologist who has been working on systematic review for 20+ years to help refine the list.

Let me know if your thoughts/if you think anything major is missing.

Thanks for taking a look!

Brittany

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**From:** Ingle, Brandall <Brandall.Ingle@icf.com>
**Sent:** Wednesday, November 13, 2019 12:44 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Greene, Sophie <greene.sophie@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>
**Subject:** HECD RSR Study Quality and Title/Abstract Screens Update

Hello All,

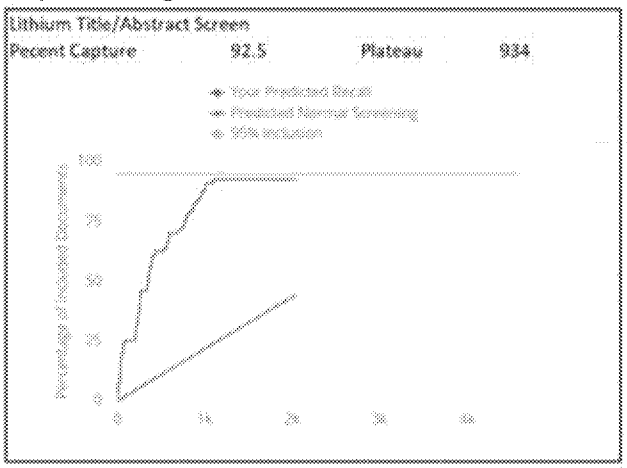
Before the meeting this afternoon, I wanted to send you an update on the RSR project and ask a few questions.

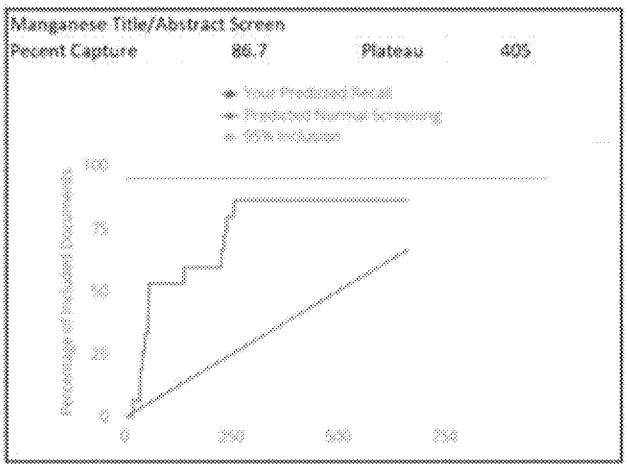
Attached is a draft of the study quality criteria for the rapid systematic review. The PECO was slightly altered to highlight the full text requirements (2+ exposure levels). Please let me know, if you have any suggestions or questions.

The title/abstract screening has been going well. We've had a questions arise related to the Cobalt and Vanadium screens, which are outlined below.

- Is Cobalt-EDTA an acceptable exposure (e.g. study 3752113)?
- In several studies, cobalt chloride is used as a hypoxia-inducing reagent, which we have been excluding. However, if the study evaluates other health effects for cobalt chloride exposure, we have been including/tagging. Is that correct?
- Can you comment on acceptable forms of Vanadium exposures? There are few cases of exposure to elemental Vanadium. I've bolded the forms of Vanadium that were deemed acceptable in an NCEA screen ICF conducted this summer.
    - Vanadium oxide
    - **Vanadium pentoxide**
    - **Sodium metavanadate**
    - **Ammonium metavanadate**
    - **Sodium orthovanadate**
    - **Vanadate**
    - **Vanadyl**
    - **Vanadyl sulfate**
    - **Vanadium nitrate**
- We recommend excluding metforminium decavanadate, as this complex salt is used as an insulin drug and could result in many off-topic hits.
- Are you interested in studies evaluating Vanadium in implants (e.g. 3750888)? In these human studies, vanadium is one metal in titanium-based alloys.

We have stopped screening for the Lithium and Manganese projects, because SWIFT has indicated that we've captured the majority of relevant references and further screening will have a low rate of return. The Lithium screen predicts that we've captured 92.5% of relevant studies (62/67), and the Manganese screen captured an estimated 86.7% of relevant studies (13/15). In both cases, inclusion had plateaued for the last 900 (Li) or 400 (Mn) references. The predicted inclusion graphs for these screens are included below. At the meeting today, we'd like to discuss protocols for when to stop screening in cases like these.




Thanks!
Brandall

**BRANDALL INGLE, PhD** | Senior Associate | brandall.ingle@icf.com | icf.com
**ICF** | 2635 Meridian Parkway, Suite 200, Durham, NC, USA

Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 4/2/2020 10:33:09 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Snow, Samantha [Samantha.Snow@icf.com]; Soares, Barbara [soares.barbara@epa.gov]; Foster, Caroline [Caroline.Foster@icf.com]
**Subject**: Re: New GenX paper

Hi,

I got the email, but maybe it's somehow being blocked by your server. Would putting the files on SharePoint help? I could do that shortly.

Thanks,
Kaedra

Sent from my iPhone

On Apr 2, 2020, at 6:27 AM, Jacobs, Brittany <jacobs.brittany@epa.gov> wrote:

Hi Sam,

For sure! I will follow up.

Okay, I'm still not seeing anything for the systematic review methods. Barbara, did you get it?

Britt

---

**From:** Snow, Samantha <Samantha.Snow@icf.com>
**Sent:** Wednesday, April 01, 2020 8:09 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: New GenX paper

Hey Brittany,

I only skimmed the paper but I know the researchers and you can bet the work is high quality! Just keep us in the loop if you need us to do anything with this paper.

Also, I just resent the lit search methods. Please let me know if you need anything else on that end!

All the best,

Sam

**Samantha J. Snow, Ph.D., DABT** | Lead Health Scientist | +1 (919) 293-1636 direct
<image001.png> Samantha.Snow@icf.com | icf.com | LinkedIn
**ICF** | 2635 Meridian Pkwy., Suite 200, Durham, NC 27713 USA

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**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, April 1, 2020 8:03 PM
**To:** Snow, Samantha <Samantha.Snow@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <Kaedra.Jones@icf.com>; Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: New GenX paper

Hi Samantha,

I have been waiting for this paper as well, I was actually expecting it before the Blake paper. I will talk to Jamie and see what she wants to do. I have to see what the results look like, but it could be a new organ system that is effected by GenX. Also, did you all send the systematic review work? If you're still wrapping it up that's fine, just wanted to make sure I didn't miss it. Thanks again!!

Brittany

---

**From:** Snow, Samantha <Samantha.Snow@icf.com>
**Sent:** Wednesday, April 01, 2020 3:17 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Jones, Kaedra <kaedra.jones@icf.com>; Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** New GenX paper

Hi Brittany,

I was skimming through the most recent EHP issue and noticed there was a new paper out of the Birnbaum lab looking at the effects of GenX on transporters in the BBB in rodents. Just wanted to pass this along in case you didn't see it.

I hope all is well. Let us know if you need anything else for this project.

All the best,

Sam

**Samantha J. Snow, Ph.D., DABT** | Lead Health Scientist | +1 (919) 293-1636 direct
<image001.png> Samantha.Snow@icf.com | icf.com | LinkedIn
**ICF** | 2635 Meridian Pkwy., Suite 200, Durham, NC 27713 USA

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/16/2018 6:44:56 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: Additional studies for Barbara

Many many thanks!!

---

**From:** Jacobs, Brittany
**Sent:** Monday, April 16, 2018 2:44 PM
**To:** Soares, Barbara <soares.barbara@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Additional studies for Barbara

I added the acute summary to the assessment. Thanks Barbara!!!!!!!

---

**From:** Soares, Barbara
**Sent:** Monday, April 16, 2018 8:00 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Re: Additional studies for Barbara

Summary of acute effects attached.

Thank you,

Barbara

---

**From:** Jacobs, Brittany
**Sent:** Thursday, April 12, 2018 4:33:25 PM
**To:** Soares, Barbara; Strong, Jamie
**Subject:** RE: Additional studies for Barbara

You rock Barbara!!

---

**From:** Soares, Barbara
**Sent:** Thursday, April 12, 2018 3:54 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Re: Additional studies for Barbara

Just updated. I double-checked the compound names used across studies. Some studies evaluate HFPO dimer acid and others evaluate HFPO dimer acid ammonium salt. I am assuming they are two varying HFPO

compounds (please correct me if I am wrong). I ended up just sticking to whichever of the two compound names was used in each study. I also removed the in vitro corrosivity study.

Thank you,

Barbara

---

**From:** Strong, Jamie
**Sent:** Thursday, April 12, 2018 1:52:38 PM
**To:** Soares, Barbara
**Cc:** Jacobs, Brittany
**Subject:** RE: Additional studies for Barbara

I did have some edits and comments, see attached.

---

**From:** Soares, Barbara
**Sent:** Wednesday, April 11, 2018 4:11 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Re: Additional studies for Barbara

Updated to include most recent collection of acute studies.

Thank you,

Barbara

---

**From:** Strong, Jamie
**Sent:** Wednesday, April 11, 2018 12:37:21 PM
**To:** Soares, Barbara
**Subject:** FW: Additional studies for Barbara

These are the other acute studies.

---

**From:** Strong, Jamie
**Sent:** Wednesday, April 11, 2018 8:08 AM
**To:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** FW: Additional studies for Barbara

Here you go!

Message

**From**: Snow, Samantha [Samantha.Snow@icf.com]
**Sent**: 6/23/2021 12:49:17 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Cronk, Ryan [Ryan.Cronk@icf.com]
**Subject**: RE: GenX PDFs

Thanks so much, Brittany! This is super helpful!!

Have an awesome day,

Sam

SAMANTHA SNOW, PhD, DABT | Lead Toxicologist (she/her/hers)
+1.919.293.1636 direct
+1.302.242.5945 mobile
icf.com | LinkedIn

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**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, June 23, 2021 8:41 AM
**To:** Snow, Samantha <Samantha.Snow@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Cronk, Ryan <Ryan.Cronk@icf.com>
**Subject:** RE: GenX PDFs

Hi Sam,

All of the studies and PDFs have been uploaded.

Thanks!
Britt

---

**From:** Snow, Samantha <Samantha.Snow@icf.com>
**Sent:** Tuesday, June 22, 2021 9:35 PM
**To:** Soares, Barbara <soares.barbara@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Cronk, Ryan <Ryan.Cronk@icf.com>
**Subject:** GenX PDFs

Hey Brittany,

I'm getting the GenX work up and running. I have all the non-Dupont PDFs so I can import those studies (n=5) into the new project. Can you send along the Dupont PDFs (n = 7; they didn't have HERO IDs). The list is below.

Thanks!

Sam

| | |
|---|---|
| DuPont-17751-1026 (2009) | Dupont Chem Co. DuPont-17751-1026: A 90-Day Oral (Gavage) Toxicity Study of H-28548 in Rats with a 28-Day Recovery. In OECD Guideline 408. (DuPont-17751-1026). |
| DuPont-18405-1037 (2010) | Dupont Chem Co. DuPont-18405-1037: An Oral (Gavage) Reproduction/Developmental Toxicity Screening Study of H-28548 in Mice. (DuPont-18405-1037). |
| DuPont-18405-1238 (2013) | Dupont Chem Co. DuPont-18405-1238: H-28548: Combined Chronic Toxicity/Oncogenicity Study 2-Year Oral Gavage Study in Rats. (DuPont-18405-1238). |
| DuPont-18405-1307 (2010) | Dupont Chem Co. DuPont-18405-1307: H-28548: Subchronic Toxicity 90-Day Gavage Study in Mice. OECD Guideline 408. (DuPont-18405-1307). |
| DuPont-18405-841 (2010) | Dupont Chem Co. DuPont-18405-841: An Oral (Gavage) Prenatal Developmental Toxicity Study of H-28548 in Rats. In US EPA OPPTS 850.3700; OECD Guideline 414.. (DuPont-18405-841). |
| DuPont-24447 (2008) | WIL Research. DuPont-24447: A 28-day oral (gavage) toxicity study of H-28397 in rats with a 28-day recovery. Volume 1. Newark, DE: E.I. du Pont de Nemours and Company. |
| DuPont-24459 (2008) | WIL Research. DuPont-24459: A 28-day oral (gavage) toxicity study of H-28397 in mice with a 28-day recovery. Volume 1. Newark, DE: E.I. du Pont de Nemours and Company. |

SAMANTHA SNOW, PhD, DABT | Lead Toxicologist (she/her/hers)

+1.919.293.1636 direct

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icf.com | LinkedIn

Message

**From**: Snow, Samantha [Samantha.Snow@icf.com]
**Sent**: 6/30/2021 1:37:06 PM
**To**: Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Cronk, Ryan [Ryan.Cronk@icf.com]
**Subject**: TD-19 GenX SQE update
**Attachments**: ATT00001.txt; HECD GenX Previous Eval Cheat Sheet.xlsx

Hi Brittany,

I went ahead and assigned you as tertiary reviewer for all 12 GenX study quality evaluations. I've also attached the "cheat sheet" that provides the final responses from the original assessment for these papers.

We're on track to finish this week with these SQEs. I'll shoot you another email when we've officially wrapped this up.

Let me know if you have any questions,

Sam

SAMANTHA SNOW, PhD, DABT | Lead Toxicologist (she/her/hers)
+1.919.293.1636 direct
+1.302.242.5945 mobile
icf.com | LinkedIn

Message

**From**: Reilly, Delaney [Delaney.Reilly@icf.com]
**Sent**: 9/4/2019 5:58:32 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Lieb, Camryn [Camryn.Lieb@icf.com]; Ingle, Brandall [Brandall.Ingle@icf.com]; Ali Goldstone [Ali.Goldstone@icf.com]; Jones, Kaedra [kaedra.jones@icf.com]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: HECD WA 3-16: TD-1 GenX Distiller project

Thanks, Brittany! I'm happy to sit down with you in a Skype meeting. Do you have time that would work best for you tomorrow or Friday?

We'll hold off on the tables until further notice.

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Tuesday, September 03, 2019 4:53 PM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Cc:** Lieb, Camryn <Camryn.Lieb@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>; Goldstone, Ali <Ali.Goldstone@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

Thanks! Please feel free to email me anytime you have an issue or question, I was just letting you know my hours so you know when to expect a reply.

I started setting up a new HAWC project and found that the batch upload feature we had looked into last week only allows the user to use the data for pivot tables, so it looks like we'll need to transfer the information from Distiller to HAWC manually. Luckily we don't have very many studies, so this shouldn't be too involved but will still take a little time. I'm working with Pam Hartman, a seasoned HAWC user and reviewer to move this data and then will have Brandall QA everything to be sure nothing is lost in the transfer. After this is finished we'll add you to the HAWC assessment and send the heat map for your review.
This sounds good, thanks for the update. I might ask for a Skype meeting so you can walk me through what was done, mostly because I haven't used HAWC and would like to learn more.

Additionally, we were working on updating some code we have for the evaluation summary tables. Do you have an idea of what you'd like those to look like? I didn't see those in the PFBS document you were emulating with the heat map. Attached is an example of the tables we've built for OPPT. We could do something similar unless you have something else in mind? These are built with data that looks pretty similar to what we're pulling from Distiller now though, so if you are thinking of adding more studies we may want to make the tables from data exported from HAWC rather than Distiller, which would require a bit of reworking.
Let's put a hold on the data evaluation tables for now. The main purpose of this TD is to get a heat map similar to what is in the PFBS document indicating that the OPPT metrics and IRIS classifications align. I'll double check with Jamie that the heat map is all we need and let you know if that changes.

Thanks again for the update and for the work done on this. Looking forward to exploring in HAWC.

All the best,
Brittany

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Tuesday, September 03, 2019 2:13 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Lieb, Camryn <Camryn.Lieb@icf.com>; Ingle, Brandall <Brandall.Ingle@icf.com>; Ali Goldstone <Ali.Goldstone@icf.com>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany,
That's really helpful. I'll keep your hours in mind when emailing in the future.

I started setting up a new HAWC project and found that the batch upload feature we had looked into last week only allows the user to use the data for pivot tables, so it looks like we'll need to transfer the information from Distiller to HAWC manually. Luckily we don't have very many studies, so this shouldn't be too involved but will still take a little time. I'm working with Pam Hartman, a seasoned HAWC user and reviewer to move this data and then will have Brandall QA everything to be sure nothing is lost in the transfer. After this is finished we'll add you to the HAWC assessment and send the heat map for your review.

Further, after the transfer is complete we may want to consider any further reviews being completed in HAWC rather than Distiller.

Additionally, we were working on updating some code we have for the evaluation summary tables. Do you have an idea of what you'd like those to look like? I didn't see those in the PFBS document you were emulating with the heat map. Attached is an example of the tables we've built for OPPT. We could do something similar unless you have something else in mind? These are built with data that looks pretty similar to what we're pulling from Distiller now though, so if you are thinking of adding more studies we may want to make the tables from data exported from HAWC rather than Distiller, which would require a bit of reworking.

Let me know your preferences! I'll keep you up to date on our progress in HAWC.
Delaney

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Tuesday, September 03, 2019 7:32 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

We do not have a project set up in HAWC yet. If you want to set that up and invite reviewers to it, that would be great! Sorry for not getting back to you on Friday, my normal schedule is Mon-Thurs 7:30am-6pm.

All the best,
Brittany

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Friday, August 30, 2019 9:56 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Ok, that sounds like it will be a good option for this project then! Do you all have a project already set up in HAWC that I would need to be invited to or should we set it up on our end and then invite the reviewers to it? I'm sure which will

work better for you all or how the logistics of that play out but I'd like to start looking at the format of the data that HAWC will need so we can start to set that up as soon as possible.

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, August 29, 2019 2:10 PM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

I spoke with Jamie this morning and I think we should go with option three. The main reason I want to do option 3 is so I can included the ICF screeners rationale in the selection of the metric. I'm not sure I will be able to do this otherwise. Let me know if you run into any issues and if we need to re-evaluate. Thanks for your work on this!

All the best,
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Wednesday, August 28, 2019 12:07 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany,
I'm glad you clarified! I had been planning to use R, since that is both what I'm most familiar with and how we worked with the data for OPPT in building their tables (much of the processing code we can transfer directly). I've never worked in HAWC before but am open to it if that's what you'd prefer. Based on my conversations with a few colleagues it seems like there may be some hiccups with getting the data formatted in a way that HAWC will be able to read it correctly but that after that it should be fairly easy to create the visualization.
Creating it in R would likely be the opposite. We would be able to get it structured and together fairly quickly and then would spend a bit more time getting the details right.
Another consideration is how flexible this should be. Are these visualizations something that you want to be able to update frequently or do you expect to only make them once? If you'd like to be able to make them and update them repeatedly it may be worth it to use R so we can set up the structure and rerun the code as often as you'd like. If this will likely be a one-off, it may be worth it to get everything formatted and ready for HAWC.
A third option would be to combine the two. We could figure out how HAWC needs to structure the data, write an R script to reformat the data in this way and then use the output from R to load into HAWC. I don't think this would be as convenient as having R create the heat map if you anticipate needing repeated runs, but if you think it will only be a few iterations it may be the better bet.
Let me know if you have any other questions or feel you want to discuss this more in depth over the phone.
Thanks!
Delaney

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Wednesday, August 28, 2019 7:04 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

I was thinking about your email and was curious if you were going to be using HAWC for the data visualizations or if you were planning to create visuals using R (or something similar)? I couldn't tell based on your email. The PFBS document housed the image we discussed on Monday in HAWC so I'm thinking it would be good to ultimately build the visualization in HAWC, but I'm open to other suggestions. I don't think we discussed that on Monday so wanted to let you know my thoughts.

Thanks!
Brittany

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**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Tuesday, August 27, 2019 11:43 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany,
Thanks for getting me set up on Distiller! Is there any way I can have access to Datarama/the reports for the project? I think it will be helpful to create a standardized report for us to pull the data with so we can set up our code around that data format.
Thanks,
Delaney

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Monday, August 26, 2019 2:38 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi,

Delaney should have access now. Let me know if there are any issues.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, August 26, 2019 11:12 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi,

Yes – Cory is also her admin.

Thanks!

-Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, August 26, 2019 11:08 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Kaedra,

Sure, is Corey Strope also her Distiller administrator?

Thanks,
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, August 26, 2019 10:21 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany and Barbara,

Could you please add Delaney Reilly to the GenX project in Distiller? Delaney will be on our call today and will help with the tables/visualizations for the project. It would be great if she could access the GenX project in Distiller, too.

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
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Message

**From**: Reilly, Delaney [Delaney.Reilly@icf.com]
**Sent**: 9/3/2019 6:12:39 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Lieb, Camryn [Camryn.Lieb@icf.com]; Ingle, Brandall [Brandall.Ingle@icf.com]; Ali Goldstone [Ali.Goldstone@icf.com]; Jones, Kaedra [kaedra.jones@icf.com]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: HECD WA 3-16: TD-1 GenX Distiller project
**Attachments**: CCl4_Epi_Eval_080219.pdf

Hi Brittany,
That's really helpful. I'll keep your hours in mind when emailing in the future.

I started setting up a new HAWC project and found that the batch upload feature we had looked into last week only allows the user to use the data for pivot tables, so it looks like we'll need to transfer the information from Distiller to HAWC manually. Luckily we don't have very many studies, so this shouldn't be too involved but will still take a little time. I'm working with Pam Hartman, a seasoned HAWC user and reviewer to move this data and then will have Brandall QA everything to be sure nothing is lost in the transfer. After this is finished we'll add you to the HAWC assessment and send the heat map for your review.

Further, after the transfer is complete we may want to consider any further reviews being completed in HAWC rather than Distiller.

Additionally, we were working on updating some code we have for the evaluation summary tables. Do you have an idea of what you'd like those to look like? I didn't see those in the PFBS document you were emulating with the heat map. Attached is an example of the tables we've built for OPPT. We could do something similar unless you have something else in mind? These are built with data that looks pretty similar to what we're pulling from Distiller now though, so if you are thinking of adding more studies we may want to make the tables from data exported from HAWC rather than Distiller, which would require a bit of reworking.

Let me know your preferences! I'll keep you up to date on our progress in HAWC.
Delaney

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Tuesday, September 03, 2019 7:32 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

We do not have a project set up in HAWC yet. If you want to set that up and invite reviewers to it, that would be great! Sorry for not getting back to you on Friday, my normal schedule is Mon-Thurs 7:30am-6pm.

All the best,
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Friday, August 30, 2019 9:56 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Ok, that sounds like it will be a good option for this project then! Do you all have a project already set up in HAWC that I would need to be invited to or should we set it up on our end and then invite the reviewers to it? I'm sure which will work better for you all or how the logistics of that play out but I'd like to start looking at the format of the data that HAWC will need so we can start to set that up as soon as possible.

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Thursday, August 29, 2019 2:10 PM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

I spoke with Jamie this morning and I think we should go with option three. The main reason I want to do option 3 is so I can included the ICF screeners rationale in the selection of the metric. I'm not sure I will be able to do this otherwise. Let me know if you run into any issues and if we need to re-evaluate. Thanks for your work on this!

All the best,
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Wednesday, August 28, 2019 12:07 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany,
I'm glad you clarified! I had been planning to use R, since that is both what I'm most familiar with and how we worked with the data for OPPT in building their tables (much of the processing code we can transfer directly). I've never worked in HAWC before but am open to it if that's what you'd prefer. Based on my conversations with a few colleagues it seems like there may be some hiccups with getting the data formatted in a way that HAWC will be able to read it correctly but that after that it should be fairly easy to create the visualization.
Creating it in R would likely be the opposite. We would be able to get it structured and together fairly quickly and then would spend a bit more time getting the details right.
Another consideration is how flexible this should be. Are these visualizations something that you want to be able to update frequently or do you expect to only make them once? If you'd like to be able to make them and update them repeatedly it may be worth it to use R so we can set up the structure and rerun the code as often as you'd like. If this will likely be a one-off, it may be worth it to get everything formatted and ready for HAWC.
A third option would be to combine the two. We could figure out how HAWC needs to structure the data, write an R script to reformat the data in this way and then use the output from R to load into HAWC. I don't think this would be as convenient as having R create the heat map if you anticipate needing repeated runs, but if you think it will only be a few iterations it may be the better bet.
Let me know if you have any other questions or feel you want to discuss this more in depth over the phone.
Thanks!
Delaney

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Wednesday, August 28, 2019 7:04 AM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

I was thinking about your email and was curious if you were going to be using HAWC for the data visualizations or if you were planning to create visuals using R (or something similar)? I couldn't tell based on your email. The PFBS document housed the image we discussed on Monday in HAWC so I'm thinking it would be good to ultimately build the visualization in HAWC, but I'm open to other suggestions. I don't think we discussed that on Monday so wanted to let you know my thoughts.

Thanks!
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Tuesday, August 27, 2019 11:43 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany,
Thanks for getting me set up on Distiller! Is there any way I can have access to Datarama/the reports for the project? I think it will be helpful to create a standardized report for us to pull the data with so we can set up our code around that data format.
Thanks,
Delaney

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Monday, August 26, 2019 2:38 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi,

Delaney should have access now. Let me know if there are any issues.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, August 26, 2019 11:12 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi,

Yes – Cory is also her admin.

Thanks!

-Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, August 26, 2019 11:08 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Kaedra,

Sure, is Corey Strope also her Distiller administrator?

Thanks,
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, August 26, 2019 10:21 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany and Barbara,

Could you please add Delaney Reilly to the GenX project in Distiller? Delaney will be on our call today and will help with the tables/visualizations for the project. It would be great if she could access the GenX project in Distiller, too.

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 7/24/2019 3:07:44 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Ali Goldstone [Ali.Goldstone@icf.com]; Ingle, Brandall [Brandall.Ingle@icf.com]
**Subject**: HECD WA 3-16: TD-1 GenX questions

Hi Barbara and Brittany,

We have a couple of GenX questions (outlined below) that we would appreciate your input on. Please let us know what you think about our proposed approaches for resolution.

- 2 studies have volumes 1-4 uploaded to Distiller and marked for independent review. In each case, volume 1 contains the body of the text, associated figures/tables, and part of Appendix A. Volumes 2-4 contain additional appendices. It might not make sense to review these independently. **Could we link these studies in Distiller so that they get a collective review, rather than duplicate reviews?**
- 4 studies have a single volume uploaded to Distiller, but the PDF indicates there are 3-13 volumes of the report. In each case, the full text and tables are contained in the available pdf, but the additional volumes contain appendices. No additional volumes are linked in HERO. **Provided the appendix doesn't contain important information for the study quality evaluation, can we list the additional volumes under the supplemental question and conduct the view as normal?**

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
**ICF** | 9300 Lee Highway, Fairfax, VA 22031 USA | icf.com

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Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 7/24/2019 4:01:11 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Soares, Barbara [soares.barbara@epa.gov]; Foster, Caroline [Caroline.Foster@icf.com]
**Subject**: RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Brittany,

Could we plan to meet on 8/8 from 10-11 AM? We have one screener on our team (Brandall) who will have to leave the call early, but I think this is the best option for our team.

Please let me know if you would ICF to send out a meeting invitation.

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, July 24, 2019 10:06 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Kaedra,

I looked at all of our (EPA) schedules for a check-in on TD2 in two weeks. Looks like the EPA screeners are available: 8/6 9-10am, 8/7 10-11am, 8/8 10-11am and 2-3pm. Let me know if any of those times work for you all. If not, I can try to move some things around.

All the best,
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, July 22, 2019 11:41 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi,

Tomorrow at 9:30 AM would work great for us. I will send a meeting invitation now.

Robyn does have an account under Cory. She will not need an account (just to be added to the projects).

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, July 22, 2019 11:33 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Kaedra,

HERO just got most of us access, so that is good!

Does Robyn already have a Distiller account under Cory Strope or will she need an account?

Yes, I did want to check in on TD-1 after the first Distiller form was completed. If the form has been completed, it looks like Barbara and I are available tomorrow from 9-10am or 11-11:30 am.

Thanks!
Brittany

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, July 22, 2019 9:25 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Brittany,

Thanks for that update. I am sorry you are still having issues! I hope they can be resolved soon.

Would it be possible to add one more individual from ICF to both the GenX and PFOA/PFOS projects in Distiller? Her name is robyn.blain@icf.com and she is one of our senior toxicologists. It will be helpful for her to have access to the projects in case our screeners have any specific questions about a study. Robyn was included in both of our TD plans.

Also, are you available for a check in call today or tomorrow to discuss TD-1? I believe we discussed wanting to check in this week during our last check in call.

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, July 22, 2019 7:54 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Frye, Jeremy <Jeremy.Frye@icf.com>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Good Morning,

As an update, I am still not able to access the PDFs. I can see the links in Distiller (thanks, Jeremy!) and can log onto HERO, but then receive a "no access" screen. I've sent a follow up email to HERO to work on the access issues, so hopefully I will hear something today.

Best,
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Friday, July 19, 2019 9:44 AM
**To:** Soares, Barbara <soares.barbara@epa.gov>; Frye, Jeremy <Jeremy.Frye@icf.com>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Barbara,

So glad this is resolved! We will be in touch Monday morning with an update. We also hope we can schedule a quick check in call for the team.

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Soares, Barbara <soares.barbara@epa.gov>
**Sent:** Friday, July 19, 2019 6:08 AM
**To:** Frye, Jeremy <Jeremy.Frye@icf.com>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <Kaedra.Jones@icf.com>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** Re: HECD WA 3-16: TD2 plan and kick off notes

It looks like the issue has been resolved and I am now able to access the pdf downloads. Thank you for your patience!

---

**From:** Frye, Jeremy <Jeremy.Frye@icf.com>
**Sent:** Tuesday, July 16, 2019 2:13:45 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Thanks for sending that PDF Brittany.

So from the info I got from you and Barbara it sounds like there are two issues that need resolving:

1. We need to edit the forms in Distiller so folks can see the URL link from the form. I think this is a simple fix, I just need to change the bibliographic style the references are being displayed with and the URL should appear once I make that fix.
2. Everyone needs PDF fetch permissions in HERO. The HERO team should be able to check those boxes and get you the permissions pretty easily. I think if you email them at their generic HERO email with a list of people that need the permissions they should be able to get you set up.
    a. **Kaedra** – Do you know if all ICFers involved in this screening have HERO accounts? If they have the accounts they should have the correct permissions. But if they need them I can make those requests. If you aren't sure, I can check our master list of accounts if you can send me the names of folks who will be working on this.

I think once those two things are resolved the links that are already in your Distiller references should work well for this screen.

I will let you know when I have the references displaying the URL correctly. I assigned myself to the level 2 references so I can verify if my fix works, I hope that is alright.

Best,
Jeremy

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, July 16, 2019 1:28 PM
**To:** Frye, Jeremy <Jeremy.Frye@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Jeremy,

I am not seeing any links connected to the references (attached is a PDF of what I see when I click on a reference to do the full text review). Additionally, when I click on the links you sent, I can log into HERO but then it says I don't have access. Maybe it's just an access issue then? I can email HERO, I guess I should just ask them for access to the full texts I requested?

Thanks for your help,
Brittany

---

**From:** Frye, Jeremy <Jeremy.Frye@icf.com>
**Sent:** Tuesday, July 16, 2019 9:32 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Brittany,

So I just got into the Distiller project and have checked out a few of your references and am a little confused. So, I have a few clarifying questions before I get started on anything:

Are the URL links the references have not working for anyone on your team?
What happens when you click the link?

I just tried out 5 links at random from the references that went to level 2, and all of them downloaded the PDF to my computer how I would expect.

Perhaps the issue is something simple? For instance, if you are not logged into HERO when you click the link, you will be taken to the HERO log-in page and the PDF won't download until you log-in. Or maybe the ones you tested didn't have PDFs yet? If the PDF has not been added to the reference's HERO page, the URL will redirect to the reference's page and a PDF will not download.

Let me know what you are seeing from your side and we can troubleshoot. But if it's just a matter of making sure folks are logged into HERO before clicking links, I think you may be good to go ☺

Some of the links I tried are below if you want to quickly check and see what happens on your end:
https://heronet.epa.gov/heronet/index.cfm/reference/download/reference_id/2851238
https://heronet.epa.gov/heronet/index.cfm/reference/download/reference_id/4238396
https://heronet.epa.gov/heronet/index.cfm/reference/download/reference_id/5080405

Best,
Jeremy

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, July 16, 2019 9:04 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Frye, Jeremy <Jeremy.Frye@icf.com>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hello,

Cory just added everyone to the project. Let me know if there are any access issues.

Thanks!
Brittany

---

**From:** Jacobs, Brittany
**Sent:** Monday, July 15, 2019 3:23 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Frye, Jeremy <Jeremy.Frye@icf.com>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Kaedra,

Thanks for the emails. I will work on getting Jeremy and the other accounts (Lindsey.Green@icf.com; katie.duke@icf.com; Brandall.Ingle@icf.com) added to the PFOA/PFOS Distiller page. ICF shouldn't have to do anything, I think I just need Kris to ask Evidence Partners to add Corey to the project first, then he can add all of the ICF accounts.

I do have a list of the HERO IDs (attached) that I originally sent to HERO. I think I will need help in getting the HERO links and then having them imported into Distiller to link to the existing references.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, July 15, 2019 2:43 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Frye, Jeremy <Jeremy.Frye@icf.com>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Brittany,

Thanks for the suggestion! I will update the TD plan. We can also help with linking the PDFs with HERO. I provided Jeremy with some hours in the TD plan to assist, but depending on your answer below, I might also update the TD plan to provide him with a few more hours to provide assistance.

First, I believe Jeremy needs to be granted access to this project in Distiller. For TD-1, I think there was an issue (that was resolved) with needing our EPA Distiller Admin (Corey Strope) to first be added to the project so that ICF staff can be added? Could you please remind me of what ICF needs to do to ensure we have distiller access? Jeremy Frye's, our librarian, username is Jeremy.frye@icf.com . We will need to be sure Jeremy is added to the project with reference management permissions (basically all project permissions up to and including "edit references").

Next, do you have a list of HERO IDs yet? If so, Jeremy can export a file with PDF links from HERO.

Do you also need Jeremy to add the references to Distiller once they are received from HERO?

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, July 15, 2019 2:01 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** RE: HECD WA 3-16: TD2 plan and kick off notes

Hi Kaedra,

The plan looks great to me, just one minor thing and an update. The minor suggestion: the TD says the work is to support six year review, and this particular effort is to support Regulatory Determination 4. And an update: I think I am going to need help from Jeremy to get the PDFs acquired from HERO onto our Distiller page. The links aren't live like I thought and I spent some time poking around on HERO and couldn't figure out how to mass export. I'm not sure if that will require a change to the TD, but figured I should mention it now.

All the best,
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Friday, July 12, 2019 12:00 PM
**To:** Soares, Barbara <soares.barbara@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>

**Cc:** Foster, Caroline <Caroline.Foster@icf.com>
**Subject:** HECD WA 3-16: TD2 plan and kick off notes

Hi Barbara and Brittany,

Please find attached the draft TD plan for TD-2 and the notes from the TD-2 kickoff call. We are always open to suggestions with our TD plans, so please let me know if you have any feedback or would like us to make any revisions.

Our team looks forward to getting started on this project!

Note that Ali Goldstone, the TD-1 lead, will provide an update on our progress on TD-1 early next week.

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
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Message

**From**: Reilly, Delaney [Delaney.Reilly@icf.com]
**Sent**: 8/27/2019 4:26:39 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Jones, Kaedra [kaedra.jones@icf.com]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: HECD WA 3-16: TD-1 GenX Distiller project

Perfect, thank you!

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Tuesday, August 27, 2019 12:25 PM
**To:** Reilly, Delaney <Delaney.Reilly@icf.com>; Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Delaney,

I just updated your permissions so you should be all set in accessing the reports. Let me know if you have any issues.

Thanks!
Brittany

---

**From:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Sent:** Tuesday, August 27, 2019 11:43 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Jones, Kaedra <kaedra.jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany,
Thanks for getting me set up on Distiller! Is there any way I can have access to Datarama/the reports for the project? I think it will be helpful to create a standardized report for us to pull the data with so we can set up our code around that data format.
Thanks,
Delaney

---

**From:** Jacobs, Brittany [mailto:jacobs.brittany@epa.gov]
**Sent:** Monday, August 26, 2019 2:38 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi,

Delaney should have access now. Let me know if there are any issues.

Thanks!
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, August 26, 2019 11:12 AM

**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi,

Yes – Cory is also her admin.

Thanks!

-Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, August 26, 2019 11:08 AM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** RE: HECD WA 3-16: TD-1 GenX Distiller project

Hi Kaedra,

Sure, is Corey Strope also her Distiller administrator?

Thanks,
Brittany

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, August 26, 2019 10:21 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Reilly, Delaney <Delaney.Reilly@icf.com>
**Subject:** HECD WA 3-16: TD-1 GenX Distiller project

Hi Brittany and Barbara,

Could you please add Delaney Reilly to the GenX project in Distiller? Delaney will be on our call today and will help with the tables/visualizations for the project. It would be great if she could access the GenX project in Distiller, too.

Thanks,
Kaedra

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
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Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 7/16/2019 2:50:13 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Soares, Barbara [soares.barbara@epa.gov]; Ali Goldstone [Ali.Goldstone@icf.com]; Foster, Caroline [Caroline.Foster@icf.com]; Ingle, Brandall [Brandall.Ingle@icf.com]
**Subject**: HECD WA 3-16: TD-1 Update and Questions

Hi Brittany,

I wanted to provide an update on our progress for TD-1. Sorry for the long email, but we thought listing everything out to provide context would be helpful. We have two issues/topics covered in this email: verifying study references and updating the text for the study quality section and adding those new fields. If scheduling a check-in call for this week would be easier, let me know.

**Issue 1: Study References**
We have updated the GenX Distiller project with a new form entitled "GenX Priority References" as a simple means of promoting selected studies to the risk of bias assessment. The form has been added to Level 1 (to allow for stream-lined selection of any possible new studies) and to Level 3 as a way to limit assessment of studies that have undergone full-text review to a selected subset. Before promoting the 8 studies to the animal tox evaluation form, we would like to verify two details. The first and second references listed below (DuPont-24447; DuPont-24459) map to four separate Distiller Reference IDs each (in red below). The individual RefIDs appear to be four separate volumes of the same study.

1. DuPont-24447 (2008): 28-Day Oral (Gavage) Toxicity Study in Rats (OECD TG 407) maps to the following RefIDs:
   - **4221045** - DuPont-24447: A 28-day oral (gavage) toxicity study of H-28397 in rats with a 28-day recovery. Volume 1
   - **4221047** - DuPont-24447: A 28-day oral (gavage) toxicity study of H-28397 in rats with a 28-day recovery. Volume 2
   - **4221049** - DuPont-24447: A 28-day oral (gavage) toxicity study of H-28397 in rats with a 28-day recovery. Volume 3
   - **4221050** - DuPont-24447: A 28-day oral (gavage) toxicity study of H-28397 in rats with a 28-day recovery. Volume 4
2. DuPont-24459 (2008): 28-Day Oral (Gavage) Toxicity Study in Mice (OECD TG 407) maps to the following RefIDs:
   - **4221051** – DuPont-24459: A 28-day oral (gavage) toxicity study of H-28397 in mice with a 28-day recovery. Volume 1
   - **4221052** - DuPont-24459: A 28-day oral (gavage) toxicity study of H-28397 in mice with a 28-day recovery. Volume 2
   - **4221053** - DuPont-24459: A 28-day oral (gavage) toxicity study of H-28397 in mice with a 28-day recovery. Volume 2
   - **4221054** - DuPont-24459: A 28-day oral (gavage) toxicity study of H-28397 in mice with a 28-day recovery. Volume 4
3. Rushing et al. (2017): 28-Day Oral (Gavage) Immunotoxicity Study in Mice – searching this Author returns RefID **3981379** - Evaluation of the immunomodulatory effects of 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-propanoate in C57BL/6 mice
4. DuPont-17751-1026 (2009): 90-Day Oral (Gavage) Toxicity Study in Rats (OECD TG 408) maps to RefID **4222142** - DuPont-17751-1026: A 90-Day Oral (Gavage) Toxicity Study of H-28548 in Rats with a 28-Day Recovery.
5. DuPont-18405-1307 (2010): 90-Day Oral (Gavage) Toxicity Study in Mice (OECD TG 408) maps to RefID **4229663** - DuPont-18405-1307: H-28548: Subchronic Toxicity 90-Day Gavage Study in Mice. OECD Guideline 408.

6. DuPont-18405-1238 (2013): Combined Chronic Toxicity/ Oncogenicity Study in Rats (OECD TG 453) maps to RefID **4222150** - DuPont-18405-1238: H-28548: Combined Chronic Toxicity/Oncogenicity Study 2-Year Oral Gavage Study in Rats.
7. DuPont-18405-1037 (2010): Oral (Gavage) Reproduction/ Developmental Toxicity Study in Mice (OECD TG 421; modified according to the Consent Order) maps to RefID **4222148** - DuPont-18405-1037: An Oral (Gavage) Reproduction/Developmental Toxicity Screening Study of H-28548 in Mice.
8. DuPont-18405-841 (2010): Prenatal and Developmental Toxicity Study in Rats (OECD TG 414) maps to RefID **4222145** - DuPont-18405-841: An Oral (Gavage) Prenatal Developmental Toxicity Study of H-28548 in Rats.

So, our questions are:

1. Are we correct to assume that you would like all four Ref IDs associated with both Dupont 24447 and Dupont 24459 promoted to the animal tox evaluation form? Or is there a volume (or a subset of volumes) of interest?
2. If there are multiple volumes of interest per study, would you like us to link the associated references (per study) in Distiller?

Please let us know your preference and we'll get these references promoted to the evaluation form and get started right away.

**Issue 2: Updating Text for Study Quality Section**

As you know, these forms were originally created for the TSCA work, and the OPPT leads have added a few new fields and indicated more will be added in order to improve clarity. For many studies, multiple study quality evaluations were submitted, and it was not clear which evaluations correspond to the associated extraction. The criteria document states on pg 108, "If a publication reports more than one study or endpoint, each study or endpoint will be evaluated separately and given a separate overall quality rating." Therefore, I foresee this being an issue for the HECD project as well.

We highly recommend that we add additional fields to the top of the forms for tracking purposes. Do we have your approval to add the fields listed below?

- Indicate if the review is Initial or QC
- Study type
- Species
- Sex
- Duration
- Health effect category
- Standardized description for title (if applicable)
- Indicate if the form should be printed to tables (if applicable).

Also, although in vitro studies are discussed in the criteria document, the associated forms are not in Distiller. Are we going to be creating/importing these as well?

Thanks,
Kaedra (and the ICF Team)

**KAEDRA JONES, MPH** | Lead Health Scientist | +1.614.702.2510 | kaedra.jones@icf.com
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Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 11/13/2019 6:53:35 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Snow, Samantha [Samantha.Snow@icf.com]
**CC**: Ingle, Brandall [Brandall.Ingle@icf.com]; Greene, Sophie [greene.sophie@epa.gov]
**Subject**: RE: HECD WA 3-16, TD-4: Questions and Distiller access

Hi Brittany,

Thank you so much for providing clarification to our questions. Sam and Brandall are going to discuss your responses and coordinate as needed to ensure the work completed on TD-1, TD-2, and TD-3 is leveraged appropriately on TD-4.

We will update the TD plan using the information provided today and will submit that later this week.

We look forward to talking later today!

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@Icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, November 13, 2019 1:19 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Snow, Samantha <Samantha.Snow@icf.com>
**Cc:** Ingle, Brandall <Brandall.Ingle@icf.com>; Greene, Sophie <greene.sophie@epa.gov>
**Subject:** RE: HECD WA 3-16, TD-4: Questions and Distiller access

Hi Kaedra and Sam,

Below are my initial thoughts on the questions you provided yesterday. Looking forward to chatting later today. Also, I was able to add Sam to the GenX project on Distiller. I think it would be useful to have her added to the HAWC page we used under TD-1 as well. Thanks!

Questions on TD-4:

- How involved will EPA be with screening and reviewing these studies (i.e., percentage of studies reviewed by EPA vs. ICF)?
    - I wanted to be involved in screening, but I think that is wishful thinking at this point. I think two ICF reviewers and then I can become involved in conflict resolution.
- Will we be using the same PECO statement used for TD-1? I've added in inclusion criteria for the comparator group, is this criteria acceptable?
    - Yes, thanks, but I think we want to use a form that allows us to target the dose response data we want (PFOA/PFOS form). The goal is to identify dose-response studies that might impact the conclusions of the assessment. Ideally, we want to incorporate all relevant information but we need to prioritize studies that may impact the conclusions of the assessment. I'm now thinking that that the literature search results from February will need to go through screening again to be binned properly.
- For study quality evaluations, will we only be performing these on **animal** and **in vitro** dose response (and potentially toxicokinetic depending on time) studies?

    - The focus should be animal, human, and PBPK (if they exist). No in vitro should be subjected to study quality evaluation at this point. I think we need to update our form to be specific to human, animal, and pbpk models. We can use the form we used for the PFOA/PFOS screening.
    - If this is the case, will there be a special tag for us to identify human studies that are relevant but that will not be carried forward to the study quality step? Or should we edit the PECO statement to remove references to human population studies?
    - I'm not anticipating there being any human studies, if there are, we need to evaluate them.
    - If we decide to perform study quality evaluations on human studies, we can provide epi study quality criteria that was used by TSCA if you wish to be consistent with what is being used by OPPT.
    - Perfect, though I don't believe there will be any human studies
- For study quality evaluations, will we be following the same metrics as laid out in the attached PDF (Appendix B)?
    - Use the same form/metrics as is in the GenX Distiller page under TD-1. This should be essentially the same as Appendix B. Let me know if it isn't.
- For each paper that passes through to the study quality evaluation step, will there be 1) one ICF primary reviewer and one EPA primary reviewer, 2) two ICF primary reviewers, or 3) one ICF/EPA primary reviewer? For all three options, we assume that each primary reviewer will be followed by a QC review.
    - If these study quality evaluations are performed in distiller, then we can have one primary review (done by either ICF or EPA) and one QC reviewer. If the study quality evaluations are performed in HAWC, we can have 2 independent primary reviews followed by a tertiary (QC reviewer) that can see both primary reviews and create a consensus answer. Which platform would you prefer?
    - It may be easier to do this in HAWC so we don't have to transfer information. I think we would want the setup to be the same as in TD-1. 2 ICF primary reviewer and then a senior toxicologist making the final call.
- For Distiller, will you want these new study quality evaluations to be performed in the same Distiller project or a new one? Will there be any updates needed to the fields used in TD-1? Do you have a preference for how you would want the final tables to look (this will influence whether any new fields need to be added)?
    - I think we would add these studies onto the heatmap we created under TD-1. I am not expecting many studies to contain dose-response information and be subject to study evaluation or contain toxicokinetic information.

---

**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Tuesday, November 12, 2019 9:05 AM
**To:** Soares, Barbara <soares.barbara@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Snow, Samantha <Samantha.Snow@icf.com>
**Cc:** Ingle, Brandall <Brandall.Ingle@icf.com>; Greene, Sophie <greene.sophie@epa.gov>
**Subject:** HECD WA 3-16, TD-4: Questions and Distiller access

Hi,

Thank you for sending TD-4. We are in the process of developing the TD plan and have identified some questions that it would be helpful to discuss before submitting the plan. Could we schedule a quick call to discuss these questions? We could reserve part of the Wednesday afternoon call to discuss TD-4 if that works better for HECD.

In addition, could you please add Sam to the GenX project in Distiller? Her username is Samantha.Snow@icf.com.

Thanks,
Kaedra

Questions on TD-4:

- How involved will EPA be with screening and reviewing these studies (i.e., percentage of studies reviewed by EPA vs. ICF)?
- Will we be using the same PECO statement used for TD-1? I've added in inclusion criteria for the comparator group, is this criteria acceptable?
- For study quality evaluations, will we only be performing these on **animal** and **in vitro** dose response (and potentially toxicokinetic depending on time) studies?
    - If this is the case, will there be a special tag for us to identify human studies that are relevant but that will not be carried forward to the study quality step? Or should we edit the PECO statement to remove references to human population studies?
    - If we decide to perform study quality evaluations on human studies, we can provide epi study quality criteria that was used by TSCA if you wish to be consistent with what is being used by OPPT.
- For study quality evaluations, will we be following the same metrics as laid out in the attached PDF (Appendix B)?
- For each paper that passes through to the study quality evaluation step, will there be 1) one ICF primary reviewer and one EPA primary reviewer, 2) two ICF primary reviewers, or 3) one ICF/EPA primary reviewer? For all three options, we assume that each primary reviewer will be followed by a QC review.
    - If these study quality evaluations are performed in distiller, then we can have one primary review (done by either ICF or EPA) and one QC reviewer. If the study quality evaluations are performed in HAWC, we can have 2 independent primary reviews followed by a tertiary (QC reviewer) that can see both primary reviews and create a consensus answer. Which platform would you prefer?
- For Distiller, will you want these new study quality evaluations to be performed in the same Distiller project or a new one? Will there be any updates needed to the fields used in TD-1? Do you have a preference for how you would want the final tables to look (this will influence whether any new fields need to be added)?

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Message

**From:** Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent:** 11/12/2019 2:05:05 PM
**To:** Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Snow, Samantha [Samantha.Snow@icf.com]
**CC:** Ingle, Brandall [Brandall.Ingle@icf.com]; Greene, Sophie [greene.sophie@epa.gov]
**Subject:** HECD WA 3-16, TD-4: Questions and Distiller access
**Attachments:** GenX Chem OCSPP Systematic Review _ source Public Comment draft.pdf

Hi,

Thank you for sending TD-4. We are in the process of developing the TD plan and have identified some questions that it would be helpful to discuss before submitting the plan. Could we schedule a quick call to discuss these questions? We could reserve part of the Wednesday afternoon call to discuss TD-4 if that works better for HECD.

In addition, could you please add Sam to the GenX project in Distiller? Her username is Samantha.Snow@icf.com.

Thanks,
Kaedra

Questions on TD-4:

- How involved will EPA be with screening and reviewing these studies (i.e., percentage of studies reviewed by EPA vs. ICF)?
- Will we be using the same PECO statement used for TD-1? I've added in inclusion criteria for the comparator group, is this criteria acceptable?
- For study quality evaluations, will we only be performing these on **animal** and **in vitro** dose response (and potentially toxicokinetic depending on time) studies?
    - If this is the case, will there be a special tag for us to identify human studies that are relevant but that will not be carried forward to the study quality step? Or should we edit the PECO statement to remove references to human population studies?
    - If we decide to perform study quality evaluations on human studies, we can provide epi study quality criteria that was used by TSCA if you wish to be consistent with what is being used by OPPT.
- For study quality evaluations, will we be following the same metrics as laid out in the attached PDF (Appendix B)?
- For each paper that passes through to the study quality evaluation step, will there be 1) one ICF primary reviewer and one EPA primary reviewer, 2) two ICF primary reviewers, or 3) one ICF/EPA primary reviewer? For all three options, we assume that each primary reviewer will be followed by a QC review.
    - If these study quality evaluations are performed in distiller, then we can have one primary review (done by either ICF or EPA) and one QC reviewer. If the study quality evaluations are performed in HAWC, we can have 2 independent primary reviews followed by a tertiary (QC reviewer) that can see both primary reviews and create a consensus answer. Which platform would you prefer?
- For Distiller, will you want these new study quality evaluations to be performed in the same Distiller project or a new one? Will there be any updates needed to the fields used in TD-1? Do you have a preference for how you would want the final tables to look (this will influence whether any new fields need to be added)?

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Message

**From**: Snow, Samantha [Samantha.Snow@icf.com]
**Sent**: 11/18/2019 6:57:54 PM
**To**: Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Greene, Sophie [greene.sophie@epa.gov]; Jones, Kaedra [kaedra.jones@icf.com]
**Subject**: RE: HECD WA 3-16; TD-4 plan
**Attachments**: HECD GenX TiAb Screening and Full Text Review Instructions - 11182019.docx

Good Afternoon Barbara, Brittany, and Sophie,

I've developed instructions for the GenX team for the title/abstract screening and full text review that will be conducted in Distiller (please refer to attachment). As directed, we will use the PECO statement developed for TD-1 and the forms developed in Distiller for the PFOS/PFOA (OW UPDATE) project. Since we're merging information from two different sources, there are several minor details that need to be clarified in order to make the directions as clear as possible. If you would please review the instructions and provide any answers, comments, and edits you may have, I would greatly appreciate it. The team over here should be able to get started screening the studies shortly after I receive your responses.

All the best,

Sam

**Samantha J. Snow, Ph.D., DABT** | Lead Health Scientist | +1 (919) 293-1636 direct
Samantha.Snow@icf.com | icf.com | LinkedIn
**ICF** | 2635 Meridian Pkwy., Suite 200, Durham, NC 27713 USA

Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 11/18/2019 4:43:25 PM
**To**: Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Greene, Sophie [greene.sophie@epa.gov]; Snow, Samantha [Samantha.Snow@icf.com]
**Subject**: HECD WA 3-16; TD-4 plan
**Attachments**: HECD WA 3-16_TD-4 Plan_11.18.19.docx

Hi Barbara and Brittany,

Thanks for all of your help providing answers to our clarifying questions. Please find attached the TD-4 plan. We welcome any and all feedback! We were not sure if HERO or the Chem-HQ approach would be used for retrieving PDFs, so we provided flexibility in the plan for that decision. We are happy to implement whatever approach you advise.

We look forward to getting started on this additional GenX work!

Thanks,
Kaedra

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Message

**From**: Euling, Susan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=CB0873315ED244FA852DF546E1191E4C-EULING, SUSAN]
**Sent**: 8/3/2021 6:38:29 AM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]
**CC**: Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: GenX Final Assessment and Response to Second Peer Review for your review

**Importance**: High

<!--[if lte mso 15 || CheckWebRef]-->

Euling, Susan has shared OneDrive for Business files with you. To view them, click the links below.

DRAFT Final GenX Chemicals Toxicity Assessment_6.21.docx

2nd Response to Peer Review_GenX_6.2021.docx

<!--[endif]-->

Hi Brittany and Greg,

Excellent, surgical corrections. Very easy to review. You have done an amazing job. I just want to make sure that you have removed all reference to TSCA Systematic Review document – I see that you reworked the section on Study Qual Eval but could you also do a search for the reference to their document and mention of it in the doc to be sure?

I am done with my comments on both documents. Ready for Betsy to add hers to the SP docs.

Sue

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, July 30, 2021 9:43 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** GenX Final Assessment and Response to Second Peer Review for your review
**Importance:** High

Good Morning,

I'm extremely happy to send you the GenX final assessment and response to the second peer review for your review. I am attaching them as links since there are multiple reviewers. The assessment is in track changes so you can see what has changed since the second peer review. Note we will need a tech edit on these documents and I have call outs to Tetra Tech for the tech edit in comment bubbles.

Highlighted below are the sections where most of the editing was done in the assessment if you want to focus your review:

- 
- 

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Let me know if you have any questions. I look forward to your edits and feedback!

All the best,
Brittany

Message

**From**: Euling, Susan [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=CB0873315ED244FA852DF546E1191E4C-EULING, SUSAN]
**Sent**: 8/5/2021 3:27:05 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]
**Subject**: RE: GenX Final Assessment and Response to Second Peer Review for your review

Can easily make the "data are" fix.

Let me know what your question (below) is and I can get back to you.

Sue

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 4, 2021 8:16 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review

I read the draft assessment and it looks great. I had a few edits in two places. Just now I tried to edit the very last paragraph and was unable to change data is to data are. I was also unable to add a comment. Guess im done. I had one question that im sure you can straighten me out on quickly.

Very nicely done. I will start on the response to comments tomorrow.

Woo hoo!

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, July 30, 2021 9:43 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** GenX Final Assessment and Response to Second Peer Review for your review
**Importance:** High

Good Morning,

I'm extremely happy to send you the GenX final assessment and response to the second peer review for your review. I am attaching them as links since there are multiple reviewers. The assessment is in track changes so you can see what has changed since the second peer review. Note we will need a tech edit on these documents and I have call outs to Tetra Tech for the tech edit in comment bubbles.

Highlighted below are the sections where most of the editing was done in the assessment if you want to focus your review:

- 
- 

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Let me know if you have any questions. I look forward to your edits and feedback!

All the best,
Brittany

Message

**From**: Miller, Gregory [Miller.Gregory@epa.gov]
**Sent**: 4/22/2021 7:48:21 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: FW: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics
**Attachments**: DRAFT GenX Chemicals Toxicity Assessment_2 4 21 CLEAN_OLEM comments.docx

Good news. Nothing major from OLEM.

Jamie do you want to be included as I share the comments for curiosity sake?

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Raffaele, Kathleen <raffaele.kathleen@epa.gov>
**Sent:** Thursday, April 22, 2021 3:37 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Foster, Stiven <Foster.Stiven@epa.gov>
**Subject:** RE: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Greg,

OLEM appreciates very much the opportunity to review the revised GenX Chemicals Toxicity Assessment. In general, we found the document to be very well written and we had only minor comments. We support that the document is ready to be released for External Peer Review.

Per the instructions on the email, I have uploaded the file with OLEM comments onto the Sharepoint Site. Please let me know if you have any questions or if we need to follow up in any way.

Thank you,

Kathleen

Kathleen Raffaele, Ph.D.

Senior Science Advisor
Policy Analysis and Regulatory Management Staff
Office of Land and Emergency Management (OLEM)
U.S. EPA

Telephone (202) 566-0301

Mailcode 5103T

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, April 21, 2021 9:28 AM

**To:** Lowit, Anna <Lowit.Anna@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Saili, Katerine <saili.katerine@epa.gov>; Dockins, Chris <Dockins.Chris@epa.gov>; Cooperstein, Sharon <Cooperstein.Sharon@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Lloyd, Christine <Lloyd.Christine@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Sundar, Bhooma <sundar.bhooma@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Subject:** RE: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Hello Agency Reviewers,
Just a gentle reminder that comments on the GenX Chemicals Toxicity Assessment are requested by this Friday, April 23rd. Please upload one set of comments from your respective office to the IRIS SharePoint site indicated below.

Thank you!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Miller, Gregory
**Sent:** Thursday, March 25, 2021 11:59 AM
**To:** Lowit, Anna <Lowit.Anna@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Saili, Katerine <saili.katerine@epa.gov>; Chris Dockins <Dockins.Chris@epa.gov>; Cooperstein, Sharon <Cooperstein.Sharon@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Lloyd, Christine <Lloyd.Christine@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Sundar, Bhooma <sundar.bhooma@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Hello all,

You are receiving this email because you have been identified as your office's point of contact for review of toxicity assessments in general and/or as the PFAS point of contact. If this has reached you by mistake and there is another individual that should be the point person, please let me know as soon as you can.

This email is to initiate the internal agency review of the revised GenX Chemicals toxicity assessment. Shortly, you will be granted access to the SharePoint site (see link below) so that you will be able to obtain the GenX Chemicals draft toxicity assessment as well as the Response to Public Comments document. Please feel free to circulate the materials within your respective office, we just ask that as the points of contact, that you compile and upload one set of comments from your respective office. We request that you post comments to the SharePoint site by **COB Friday, April 23rd**.

**Ex. 6 Personal Privacy (PP)**

We appreciate your feedback. Please let me know if there are any questions.

Thank you!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 5/19/2020 7:25:37 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Blake/Fenton: Materials for review

Thanks Greg!

Yeah I think Bevin and Sue tended to agree with what Jason suggests for the MOA section. I think it'll make the section stronger as well. Jason also said a reorganization of the MOA section will make it more consistent with the other PFAS assessments ORD is working on, so I think that's another benefit of taking his comments. We can discuss more on Thursday morning once everyone has had a chance to look through the comments, but I'm pro-incorporating Jason/Samantha's comments into the MOA section. If we decide we are in agreement on Thursday then I will work on that section.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, May 19, 2020 3:19 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Blake/Fenton: Materials for review

I moved the Blake/Fenton edits and comments from the "Database UF" and "Blake et al Writeup" docs into our OneDrive draft. The redline edits look acceptable to me, but we'll need to think about a few of the comments.

Earlier today I moved the ORD comments on our UFs section into our draft. So this just leaves the MOA comments to be imported into our draft.

Britt – I'm going to leave the MOA edits from Blake/Fenton and ORD for you to work though. You spent a lot of time with that section and Jason's comments sound like they will take some thought.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, May 7, 2020 7:39 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Materials for review

here you go

---

**From:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Sent:** Wednesday, May 06, 2020 9:39 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Blake, Bevin (NIH/NIEHS) [F] <bevin.blake@nih.gov>
**Subject:** RE: Materials for review

Hi Jamie,

**Ex. 5 Deliberative Process (DP)**

Thank you for letting us comment – this was fun and we have manuscripts drafted and nearly ready for clearance to help with the mechanism in liver, mammary gland, and placenta. I hope you find our comments helpful.

All the best,
Sue

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 20, 2020 7:59 AM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** Materials for Bevin/Sue to review

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

**Ex. 5 Deliberative Process (DP)**

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 9/29/2020 7:01:58 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: Draft GenX chronic HA

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Tuesday, September 29, 2020 2:29 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Re: Draft GenX chronic HA

**Ex. 5 Deliberative Process (DP)**

Sent from my iPhone

On Sep 29, 2020, at 7:33 AM, Strong, Jamie <Strong.Jamie@epa.gov> wrote:

Betsy,

**Ex. 5 Deliberative Process (DP)**

Jamie

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, September 28, 2020 3:05 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Draft GenX chronic HA

In the attached you will see the affect of the uncertainty factors on the HA estimates.

Greg

<DRAFT GenX chronic HA EPA estimate vs NC PHG_9 28 20_DO NOT CITE OR QUOTE.xlsx>

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 9/29/2020 6:19:30 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]
**CC**: Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: Re: Draft GenX chronic HA

**Ex. 5 Deliberative Process (DP)**

Sent from my iPhone

On Sep 29, 2020, at 7:24 AM, Strong, Jamie <Strong.Jamie@epa.gov> wrote:

**Ex. 5 Deliberative Process (DP)**

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, September 28, 2020 3:05 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Draft GenX chronic HA

In the attached you will see the affect of the uncertainty factors on the HA estimates.

Greg

Message

**From:** Owens, Beth [Owens.Beth@epa.gov]
**Sent:** 2/24/2021 3:14:26 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]
**Subject:** RE: Finalizing GenX and PFBS assessments
**Attachments:** HERA Session 2.5_Carlson_PFAS SEM.pdf

Hi Betsy,

I wanted to follow up on the PFAS Systematic Evidence Maps work going on in CPHEA. It sounds like Brittany and Greg are already looped in and well connected on what's being developed. Just for information, I've attached a recent presentation on the work. You can view the PFAS 150 visuals at this link. In addition, there is a deeper dive into the epidemiology studies that can be found here.
https://public.tableau.com/profile/literature.inventory#!/vizhome/PFAS150_tableau/Dashboard1

Let us know if you have questions on anything.
Beth

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 12, 2020 1:09 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments
**When:** Wednesday, February 24, 2021 9:00 AM-9:30 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

New Teams meeting

---

Join Microsoft Teams Meeting

Ex. 6 Personal Privacy (PP) Washington DC (Toll)

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By participating in EPA hosted virtual meetings and events, you are consenting to abide by the agency's terms of use. In addition, you acknowledge that content you post may be collected and used in support of FOIA and eDiscovery activities.

---

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 8/22/2018 10:25:25 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]
**CC**: Champlin, Anna [Champlin.Anna@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: coordination on document development: call in Ex. 6 Personal Privacy (PP)
**Attachments**: GenX Chemicals and PFBS Toxicity Assessment FRN_2018 cfbb_blj bb.doc

A few suggestions on the first part of the FRN. Looking good

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, August 21, 2018 1:59 PM
**To:** Jones, Samantha <Jones.Samantha@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>
**Cc:** Champlin, Anna <Champlin.Anna@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: coordination on document development: call in Ex. 6 Personal Privacy (PP)

Hello,

Attached is the updated draft FRN which follows the most recent template for notices requesting public comments. I've highlighted the specific spots where we need ORD input, but edit the entire document as you see fit. I was told the summary was too geeky. I tried to simplify, but I welcome additional suggestions to un-geekify it.

Thanks in advance for your help and edits,
Brittany

-----Original Appointment-----
**From:** Behl, Betsy
**Sent:** Monday, February 12, 2018 8:09 AM
**To:** Behl, Betsy; Bahadori, Tina; Strong, Jamie; Jones, Samantha; Lambert, Jason
**Cc:** Miller, Gregory; Jacobs, Brittany; Owens, Beth; Champlin, Anna
**Subject:** coordination on document development: call in Ex. 6 Personal Privacy (PP)
**When:** Tuesday, August 21, 2018 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

Updated home stretch calendar for today and added the latest version I have of the FRN . If I get more current comms materials I will update.
Samantha's questions for 8/21:

- At the stakeholder meeting on the 27th, we are going to verbally share what we think our RfDs (study, effect, etc) will be in the public comment draft to be soon released.
- Can we briefly go over our expectations for the next steps both before and after release for public comment?
- In terms of sending final packages over, the schedule says the 15th but I'm not sure that gives us enough time to incorporate tech edit and final adjustments…I recall the 20th being mentioned as the pre-pub version (?) on the call from Friday…sorry it was hard to follow some things on the phone.
- Thanks to Brittany for getting us straight on the docket, we should be good. We may add one more person, I'll let you know Brittany.
- The FRN, Colleen is covering that, right? When would you like us to review it?
- Do we know if the tech edit will address PDF'ing the documents as well as making them 508c compliant?
- Do we have a draft comms plan for review?

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/20/2019 2:18:06 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

I think the weather has people otherwise occupied. Quick update: We're still working on our comment triage. Trying to develop a strategy for responding to individual comments. We've received some late comments from Chemours and friends and Betsy is drafting a response to them. More to come.

Greg

---

**From:** Jones, Samantha
**Sent:** Wednesday, February 20, 2019 9:09 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Hi all,

Are we still meeting today or are folks unavailable due to the weather in DC?

Thanks,
Samantha

Samantha J. Jones, PhD
NCEA Associate Director
HHRA Interim Deputy National Program Director
USEPA, ORD/NCEA
RRB 51214
(o) 202-564-6794; (m) 703-943-7990

-----Original Appointment-----
**From:** Behl, Betsy
**Sent:** Wednesday, February 6, 2019 4:15 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Lavoie, Emma
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**When:** Wednesday, February 20, 2019 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 4/22/2019 2:55:26 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Will do. Have a great week all!!

---

**From:** Jones, Samantha
**Sent:** Monday, April 22, 2019 10:52 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

I think considering everyone is working in the weeds to address public comments, we can probably cancel for this week. If anything comes up, perhaps we address over email.

Thanks,
Samantha

**Samantha J. Jones, PhD**
**Director, Cincinnati Division** (Acting)
National Center for Environmental Assessment (NCEA)
Office of Research and Development (ORD)
US Environmental Protection Agency (EPA)
AWBERC A-133
(o) 513-569-7697; (m) 703-943-7990

---

**From:** Behl, Betsy
**Sent:** Monday, April 22, 2019 10:43 AM
**To:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Folks, Jamie is out on Wednesday and I am booked. Do you want to cancel the meeting this week or get together yourselves?
B

Message

**From**: Miller, Gregory [Miller.Gregory@epa.gov]
**Sent**: 2/28/2018 11:48:38 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: Slides from Earl Gray's GenX research presentation - 2/27/18

If you sort the files by filename, they should follow the order of presentation.

Ex. 6 Personal Privacy (PP)

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 8/1/2019 11:34:16 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: BMD modeling email to NCEA

Okay then I may have messed up...I thought I sent Tala ACC comments not these. Let me look at that email. We should include everything that says to do that.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, August 01, 2019 7:33 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: BMD modeling email to NCEA

The Crouch and Green comments actually did combine the two data sets. I'm not sure if others also commented that we should combine.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 01, 2019 7:32 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: BMD modeling email to NCEA

I thought the combining modeling comments were ACC.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, July 29, 2019 11:44 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** BMD modeling email to NCEA

Hi,

Here is an email giving NCEA some additional detail for the BMD modeling assistance we are hoping to get. Edit as you see fit or let me know if you want additional detail, etc. See the highlight, not sure if that is accurate. Also attached all of the documents I think we would want to send.

Britt

---

Hi Samantha, Tina and Kris,

As a follow-up to our discussion last week, this email is adding some detail to the modeling work we are anticipating needing to complete the GenX chemicals toxicity assessment. Thanks again for your willingness to get us the support we need.

1. **Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

Message

**From**: Miller, Gregory [Miller.Gregory@epa.gov]
**Sent**: 8/1/2019 11:49:47 AM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: FW: GenX data combination comment
**Attachments**: Crosswalk for GenX Comment Numbers to Comment Letters 5 29 19.docx

TetraTech's summary of this comment lists "EPA-HQ-OW-2018-0614-0032 American Chemistry Council, Chemical Products and Technology Division, -0037 Green Toxicology LLC" as the originator of the comment.

**From:** Miller, Gregory
**Sent:** Wednesday, May 15, 2019 1:55 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** GenX data combination comment

Let's talk about this later…

**1.1.7 Comment:** A commenter mentioned that EPA bases its toxicity value for the GenX chemicals on liver effects reported in a mouse reproductive/developmental toxicity screening study, despite that a 90-day subchronic study is available (DuPont-18405-1307) which provides additional relevant hepatic measurements (e.g. alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase). The commenter notes that additional consideration as to the relevance of liver hypertrophy to humans should be considered (Hall et al. 2012). The commenter further notes that EPA dismisses the results from the 90-day study because of the smaller sample size without addressing the other significant aspects of the study. The commenter mentioned that the longer exposure time in the 90-day study should improve chances to observe necrosis despite the lower statistical power. In addition, the consistency of the necrosis data with the liver enzyme results provides a more complete picture of what is happening in the liver than the more limited data available from the reproductive/ developmental study used in the assessment. In addition, the commenter notes that the minimal liver necrosis observed in the reproductive/developmental study used in the assessment may suggest an adaptive, non-adverse reaction in mice or a response to other stressors for which no acknowledgement has been made. Based on the liver effects reported in the 90-day study, the lowest observed adverse effect level (LOAEL) is 5.0 mg/kg/day and the no observed adverse effect level (NOAEL) is 0.5 mg/kg/day. The commenter noted that a benchmark dose analysis of the data conducted by the North Carolina Department of Health and Human Services suggests the lower limit of the benchmark dose lower limit ($BMDL_{10}$) of between 0.449 and 0.446 mg/kg/day. The commenter noted that if EPA uses these values as the point of departure, a human equivalent dose (HED) of 0.067 to 0.070 mg/kg/day would be generated compared to 0.023 mg/kg/day presented by EPA.

Another commenter noted that the hepatocellular single cell necrosis dose-response data for male mice for 84 or 85 days and the 90-day male mouse study were carried out at the same dose levels and used the same species, strain and mouse supplier company. Therefore, these two bioassays should be considered of equivalent status, and treated as if they are a single experiment; this would result in an increase in the estimated RfD by a factor of 1.42. In addition, the commenter noted that the overall effect of applying this factor, using AUC/dose scaling from mouse to monkey and monkey to human, and applying a subchronic to

chronic UF of 1, would be to increase the RfD of GenX to 2.5e-3 mg/kg/day. The commenter provided an attached spreadsheet with these updated calculations.

***EPA Response:*** Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 8/1/2019 12:57:47 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: RE: GenX data combination comment

Okay good...thought I had missed something. So its both ACC and Green and Crouch.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, August 01, 2019 7:57 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX data combination comment

And the Text of the comment is summarized from Crouch and Greene (a.k.a Green Toxicology LLC).

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, August 1, 2019 7:50 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: GenX data combination comment

TetraTech's summary of this comment lists "EPA-HQ-OW-2018-0614-0032 American Chemistry Council, Chemical Products and Technology Division, -0037 Green Toxicology LLC" as the originator of the comment.

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**From:** Miller, Gregory
**Sent:** Wednesday, May 15, 2019 1:55 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** GenX data combination comment

Let's talk about this later...

**1.1.7 Comment:** A commenter mentioned that EPA bases its toxicity value for the GenX chemicals on liver effects reported in a mouse reproductive/developmental toxicity screening study, despite that a 90-day subchronic study is available (DuPont-18405-1307) which provides additional relevant hepatic measurements (e.g. alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase). The commenter notes that additional consideration as to the relevance of liver hypertrophy to humans should be considered (Hall et al. 2012). The commenter further notes that EPA dismisses the results from the 90-day study because of the smaller sample size without addressing the other significant aspects of the study. The commenter mentioned that the longer exposure time in the 90-day study should improve chances to observe necrosis despite the lower statistical power. In addition, the consistency of the necrosis data with the liver enzyme results provides a more complete picture of what is happening in the liver than the more limited data available from the reproductive/ developmental study used in the assessment. In addition, the commenter notes that the minimal liver necrosis observed in the reproductive/developmental study used in the assessment may suggest an adaptive, non-adverse reaction in mice or a response to other stressors for which no acknowledgement has

been made. Based on the liver effects reported in the 90-day study, the lowest observed adverse effect level (LOAEL) is 5.0 mg/kg/day and the no observed adverse effect level (NOAEL) is 0.5 mg/kg/day. The commenter noted that a benchmark dose analysis of the data conducted by the North Carolina Department of Health and Human Services suggests the lower limit of the benchmark dose lower limit ($BMDL_{10}$) of between 0.449 and 0.446 mg/kg/day. The commenter noted that if EPA uses these values as the point of departure, a human equivalent dose (HED) of 0.067 to 0.070 mg/kg/day would be generated compared to 0.023 mg/kg/day presented by EPA.

Another commenter noted that the hepatocellular single cell necrosis dose-response data for male mice for 84 or 85 days and the 90-day male mouse study were carried out at the same dose levels and used the same species, strain and mouse supplier company. Therefore, these two bioassays should be considered of equivalent status, and treated as if they are a single experiment; this would result in an increase in the estimated RfD by a factor of 1.42. In addition, the commenter noted that the overall effect of applying this factor, using AUC/dose scaling from mouse to monkey and monkey to human, and applying a subchronic to chronic UF of 1, would be to increase the RfD of GenX to 2.5e-3 mg/kg/day. The commenter provided an attached spreadsheet with these updated calculations.

***EPA Response:*** **Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Message

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 11/8/2019 2:21:40 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Thoughts on modeling

Okay to discuss next week:

1. Briefing for Dave
2. Modeling (we will most likely need to talk to ORD stats and NTP to make final decisions)
3. RTC (I am getting a lot of pressure from Betsy)
4. Schedule (Betsy asked me to revise the GenX schedule to include peer review and TWG review)
5. Plan for next few weeks before baby girl arrives (what should Brittany focus on, where are things like the sys review, MOA, etc)

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, November 07, 2019 5:53 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Thoughts on modeling

Repro/developmental study

- Single cell necrosis males
- Single cell necrosis females
- Necrosis (single cell and focal necrosis combined) males
- Necrosis (single cell and focal necrosis combined) females

Questions

- 
- 
- 

Ex. 5 Deliberative Process (DP)

Should

- 
- 

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 2/3/2020 2:27:32 PM
**To**: Farrar, David [Farrar.David@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: White, Paul [White.Paul@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Zhao, Jay [Zhao.Jay@epa.gov]; Thayer, Kris [thayer.kris@epa.gov]; Soto, Vicki [Soto.Vicki@epa.gov]; Rice, Glenn [rice.glenn@epa.gov]; Subramaniam, Ravi [Subramaniam.Ravi@epa.gov]; Cai, Christine [Cai.Christine@epa.gov]; Davis, Allen [Davis.Allen@epa.gov]
**Subject**: RE: GenX BMD Modeling Support - consideration of premature animal deaths

Many thanks David and Team. We greatly appreciate your assistance.

Best, Betsy

---

**From:** Farrar, David <Farrar.David@epa.gov>
**Sent:** Friday, January 31, 2020 5:04 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Rice, Glenn <rice.glenn@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Davis, Allen <Davis.Allen@epa.gov>
**Subject:** GenX BMD Modeling Support - consideration of premature animal deaths

Hi Greg and Jamie,

The SWG (particularly Christine Cai, Statistician) has completed work requested in emails from Jamie at 12/11/2019 and Greg 01/23/2020. The SWG is somewhat proud to have accomplished additional work beyond what was originally agreed, without requesting a deadline extension. Attached are:

- Word document "CPHEA GenX BMDS Modeling Support Req3 .... As transmitted"
- Modeling files and summary tables in compressed format (i.e. Zip).

Please let us know if you have any questions.

Best,
David Farrar

David Farrar, Ph.D., Biostatistician
513 569 7762 (R) 513 830 6411 (A)

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, January 29, 2020 10:25 AM
**To:** Davis, Allen <Davis.Allen@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>;

Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - consideration of premature animal deaths

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Ex. 5 Deliberative Process (DP)

**From:** Davis, Allen <Davis.Allen@epa.gov>
**Sent:** Wednesday, January 29, 2020 10:05 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine

<Cai.Christine@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - consideration of premature animal deaths

Ex. 5 Deliberative Process (DP)

J. Allen Davis, MSPH
Biologist
Center for Public Health and Environmental Assessment
U.S. Environmental Protection Agency
Office Phone: 513-569-7024
AWL Phone: 615-730-6693
Cell: 205-422-0655
email: davis.allen@epa.gov

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, January 23, 2020 2:55 PM
**To:** Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Davis, Allen <Davis.Allen@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX BMD Modeling Support - consideration of premature animal deaths

Ravi and Stats Workgroup,
Thank you again for all of your team's help with BMD modeling of these GenX data. As we discussed, we recently

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

As we discussed, it would be helpful for our internal planning if you could provide an estimate on how long it might take you to complete this work given that (at least for the version including the animals that died on study) some work has already begun.

Thank you so much for your continued support!

Ex. 5 Deliberative Process (DP)

Thanks again for your hard work,

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Miller, Gregory [Miller.Gregory@epa.gov]
**Sent**: 2/4/2020 8:26:43 PM
**To**: Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]
**CC**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Subject**: FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments**: EHP6233R2_Supplement_CLEAN_01132020_BEB.docx; EHP6233_R3 final without Supp.pdf

Hey Chris,
Attached is the paper we'd like to get your input on. We're specifically interested in your thoughts about whether it

**Ex. 5 Deliberative Process (DP)**

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."
    - Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis

        - Generally, these effects exhibited a dose response and got worse over the dosing period
        - Saw these effects after just 10 or 16 days of dosing
        - Sample size was pretty small (N = 5)
    - Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
        - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
    - Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
        - Constellation of lesions exhibited a dose response
        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

Message

**From**: Cai, Christine [Cai.Christine@epa.gov]
**Sent**: 2/25/2020 3:41:48 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Davis, Allen [Davis.Allen@epa.gov]
**Subject**: RE: GenX BMD Modeling Support - write up of BMD modeling results

Hi Greg,
It looks good. Thanks!
I will work based on your template. Just keep in mind, different versions of BMDS have different output formats.
Best regards,
Christine

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, February 24, 2020 3:04 PM
**To:** Cai, Christine <Cai.Christine@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Christine,
The word doc is attached. Please let us know if you need anything else.

Thanks!

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Cai, Christine <Cai.Christine@epa.gov>
**Sent:** Monday, February 24, 2020 2:45 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Ramasamy, Santhini <Ramasamy.Santhini@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Hi Brittany, Greg and Jamie,
Do you have Word template I can work on? The attached template in Jamie's email last Friday was PDF. Thanks!
Best regards,
Christine

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, February 24, 2020 11:51 AM

**To:** Zhao, Jay <Zhao.Jay@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Ramasamy, Santhini <Ramasamy.Santhini@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Sounds good. Thank you.

---

**From:** Zhao, Jay <Zhao.Jay@epa.gov>
**Sent:** Monday, February 24, 2020 11:43 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Ramasamy, Santhini <Ramasamy.Santhini@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Hi, Jamie,

I am co-chair on the SWG group with David Farrar and David is vacation now. To answer your question regarding the timeline to finish this support, we can deliver the revised document to you by COB March 12. Hope this plan works for you.

If you have any questions, please feel free to contact Christine or me.

Thanks.

Jay

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, February 24, 2020 7:48 AM
**To:** Cai, Christine <Cai.Christine@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Thanks Kris. Christine, the answers to your questions are below in red.

Jamie

---

**From:** Cai, Christine <Cai.Christine@epa.gov>
**Sent:** Monday, February 24, 2020 7:14 AM
**To:** Thayer, Kris <thayer.kris@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Hi all,
I will need more information to estimate the timeframe from our end.
For example:

**Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

Best regards,
Christine

**From:** Thayer, Kris <thayer.kris@epa.gov>
**Sent:** Saturday, February 22, 2020 4:22 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Davis, Allen <Davis.Allen@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - write up of BMD modeling results

Thanks Jamie!

I recently took over as management liaison for Ravi, so I'll help shepherd this request through SWG.

Christine/Allen, can you evaluate the request below and provide a timeframe for providing the summary text?

Thanks

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Friday, February 21, 2020 3:52 PM
**To:** Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>
**Cc:** Thayer, Kris <thayer.kris@epa.gov>; Davis, Allen <Davis.Allen@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** GenX BMD Modeling Support - write up of BMD modeling results

Hello,

Ex. 5 Deliberative Process (DP)

Thank you for your continued support throughout this process! Your work is greatly appreciated!

Happy to set up time to talk.

Jamie

**From:** Farrar, David <Farrar.David@epa.gov>
**Sent:** Friday, January 31, 2020 5:04 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Rice, Glenn <rice.glenn@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Davis, Allen <Davis.Allen@epa.gov>
**Subject:** GenX BMD Modeling Support - consideration of premature animal deaths

Hi Greg and Jamie,

The SWG (particularly Christine Cai, Statistician) has completed work requested in emails from Jamie at 12/11/2019 and Greg 01/23/2020. The SWG is somewhat proud to have accomplished additional work beyond what was originally agreed, without requesting a deadline extension. Attached are:

- Word document "CPHEA GenX BMDS Modeling Support Req3 .... As transmitted"
- Modeling files and summary tables in compressed format (i.e. Zip).

Please let us know if you have any questions.

Best,
David Farrar

David Farrar, Ph.D., Biostatistician
513 569 7762 (R) 513 830 6411 (A)

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, January 29, 2020 10:25 AM
**To:** Davis, Allen <Davis.Allen@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - consideration of premature animal deaths

**Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

**From:** Davis, Allen <Davis.Allen@epa.gov>
**Sent:** Wednesday, January 29, 2020 10:05 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX BMD Modeling Support - consideration of premature animal deaths

Ex. 5 Deliberative Process (DP)

J. Allen Davis, MSPH
Biologist
Center for Public Health and Environmental Assessment

U.S. Environmental Protection Agency
Office Phone: 513-569-7024
AWL Phone: 615-730-6693
Cell: 205-422-0655
email: davis.allen@epa.gov

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, January 23, 2020 2:55 PM
**To:** Subramaniam, Ravi <Subramaniam.Ravi@epa.gov>; Cai, Christine <Cai.Christine@epa.gov>; Davis, Allen <Davis.Allen@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; White, Paul <White.Paul@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Farrar, David <Farrar.David@epa.gov>; Zhao, Jay <Zhao.Jay@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX BMD Modeling Support - consideration of premature animal deaths

Ravi and Stats Workgroup,

Ex. 5 Deliberative Process (DP)

As we discussed, it would be helpful for our internal planning if you could provide an estimate on how long it might take you to complete this work given that (at least for the version including the animals that died on study) some work has already begun.

Thank you so much for your continued support!

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks again for your hard work,

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 2/11/2020 5:38:24 PM
**To**: Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments**: DuPont-18405-1037.pdf

Developmental Repro Study attached. The gestational weight gain table is table S10 on page 80 of the PDF. Thanks so much!!

---

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 11, 2020 7:35 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I ran a few models. I think we can get something useable out of it, but a few questions first.

**Ex. 5 Deliberative Process (DP)**

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 05, 2020 7:55 AM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Thanks Chris! Excited to get your input on the paper!

---

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 04, 2020 5:45 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I'm happy to take a look. At first glance it seems straight forward. Let me take a little time with it otherwise I'll probably forget stuff to collect thoughts and we meet Tuesday.
p.s. Brittany, welcome back **Ex. 6 Personal Privacy (PP)**

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 04, 2020 3:27 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

Attached is the paper we'd like to get your input on. We're specifically interested in your thoughts about whether it might be possible to model the increase in gestation weight gain and/or incidence of placental lesions. It's a two dose plus control study. Brittany put together a quick summary of the important points from the paper (below). When you're ready, lets set up a time to talk. Brittany is back part time [Ex. 6 Personal Privacy (PP)] and is in the office on Tuesday and Wednesday each week. Think you could be ready to give us your thoughts by next Tuesday (unless you're a speed-reader and want to talk tomorrow)?

Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."
    - Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis
        - Generally, these effects exhibited a dose response and got worse over the dosing period
        - Saw these effects after just 10 or 16 days of dosing
        - Sample size was pretty small (N = 5)
    - Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
        - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
    - Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
        - Constellation of lesions exhibited a dose response

        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

Message

**From**: Flaherty, Colleen [Flaherty.Colleen@epa.gov]
**Sent**: 2/10/2021 5:26:08 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Bradford, Charlotte [Bradford.Charlotte@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]; Carroll, Gregory [Carroll.Gregory@epa.gov]; Christ, Lisa [Christ.Lisa@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Hautman, Dan [Hautman.Dan@epa.gov]; Wang, Lili [Wang.Lili@epa.gov]; Pollard, Amina [Pollard.Amina@epa.gov]
**CC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: SRMD/HECD Coordination Meeting

Another topic:

- Regulating PFOA and PFOS as a mixture

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, February 9, 2021 4:02 PM
**To:** Bradford, Charlotte <Bradford.Charlotte@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Rodgers-Jenkins, Crystal <Rodgers-Jenkins.Crystal@epa.gov>; Carroll, Gregory <Carroll.Gregory@epa.gov>; Christ, Lisa <Christ.Lisa@epa.gov>; Albert, Ryan <Albert.Ryan@epa.gov>; Hautman, Dan <Hautman.Dan@epa.gov>; Wang, Lili <Wang.Lili@epa.gov>; Pollard, Amina <Pollard.Amina@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: SRMD/HECD Coordination Meeting

Hello!

We have a few agenda items we would like to discuss tomorrow:

- Feedback on TSCA risk assessments
- WHO PFOA/PFOS document review
- Update on GenX risk assessment

And as a heads up, for our next check-in we would like to talk about the OST DBP workplan.

Thanks!
Brittany

-----Original Appointment-----
**From:** Bradford, Charlotte <Bradford.Charlotte@epa.gov>
**Sent:** Monday, February 8, 2021 8:37 AM
**To:** Bradford, Charlotte; Burneson, Eric; Behl, Betsy; Flaherty, Colleen; Rodgers-Jenkins, Crystal; Carroll, Gregory; Christ, Lisa; Albert, Ryan; Hautman, Dan; Wang, Lili; Pollard, Amina
**Cc:** Miller, Gregory; Jacobs, Brittany
**Subject:** SRMD/HECD Coordination Meeting
**When:** Wednesday, February 10, 2021 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

Forwarding since you're acting for Jamie. I'm also going to miss the meeting for my dentist appt.

-----Original Appointment-----
**From:** Bradford, Charlotte <Bradford.Charlotte@epa.gov>
**Sent:** Thursday, September 17, 2020 12:56 PM
**To:** Bradford, Charlotte; Burneson, Eric; Behl, Betsy; Flaherty, Colleen; Rodgers-Jenkins, Crystal; Carroll, Gregory; Christ,

Lisa; Albert, Ryan; Hautman, Dan; Wang, Lili; Pollard, Amina
**Cc:** Miller, Gregory
**Subject:** SRMD/HECD Coordination Meeting
**When:** Wednesday, February 10, 2021 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 9/20/2021 10:31:07 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Small, Matthew [Small.Matthew@epa.gov]; roger.brewer@doh.hawaii.gov; diana.felton@doh.hawaii.gov; Wilson, Patrick [Wilson.Patrick@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** update for HI on EPA final GenX toxicity assessment
**Location:** Microsoft Teams Meeting

**Start:** 9/23/2021 8:00:00 PM
**End:** 9/23/2021 9:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Small, Matthew; roger.brewer@doh.hawaii.gov; diana.felton@doh.hawaii.gov; Wilson, Patrick; Brittany Jacobs; Miller, GregoryG

Dear colleagues from Hawaii,
Please join us for a briefing on the final toxicity assessment for GenX Chemicals, highlighting changes in response to public and peer review comments. We are holding these meetings only for states who have developed guidelines for GenX chemicals so that scientists can understand the nature of the changes we made. This outreach is specifically designed for those familiar with the toxicity database for GenX chemicals. The assessment itself is currently embargoed and we anticipate its release this fall. After it is released we plan a series of webinars to share results more broadly.
Please do not forward this meeting invitation further.

Thank you for your interest and we look forward to speaking with you.

Betsy
Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-
4747

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**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 9/20/2021 10:37:18 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Gloria.Post@dep.nj.gov; Mingzhu.fang@dep.nj.gov; DAgostino, Daniel [DAgostino.Daniel@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Pachkowski, Brian [brian.pachkowski@dep.nj.gov]; Ash, Christine [Ash.Christine@epa.gov]; Boucher, Aimee [Boucher.Aimee@epa.gov]

**Subject:** update for NJ on EPA final GenX toxicity assessment
**Location:** Microsoft Teams Meeting

**Start:** 9/23/2021 3:00:00 PM
**End:** 9/23/2021 4:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Post, Gloria (DEP); Mingzhu.fang@dep.nj.gov; DAgostino, Daniel; Olsen, Marian; Jacobs, Brittany; Miller, GregoryG; brian.pachkowski@dep.nj.gov; Ash, Christine; Boucher, Aimee

Dear colleagues from New Jersey,
Please join us for a briefing on the final toxicity assessment for GenX Chemicals, highlighting changes in response to public and peer review comments. We are holding this meeting only for states who have developed guidelines for GenX chemicals so that scientists can understand the nature of the changes we made. This outreach is specifically designed for those familiar with the toxicity database for GenX chemicals. The assessment itself is currently embargoed and we anticipate its release this fall. After it is released we plan a series of webinars to share results more broadly.
Please do not forward this meeting invitation further.

Thank you for your interest and we look forward to speaking with you.

Betsy
Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 9/20/2021 10:57:54 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Harris, Kimberly [harris.kimberly@epa.gov]; Carol.Hawbaker@illinois.gov; Matt Prater [mprater@idem.in.gov]; Jennifer Gray [grayj@michigan.gov]; wildfange@michigan.gov; Groetsch, Kory J. (DHHS) [Groetschk@michigan.gov]; Amy.Klei@epa.ohio.gov; SarahP.Yang@dhs.wisconsin.gov; Braverman, Carole [braverman.carole@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Bailey, Jordan (DHHS-Contractor) [BaileyJ17@michigan.gov]

**Subject:** update for IL, IN, MI, OH, WI on EPA final GenX toxicity assessment
**Location:** Microsoft Teams Meeting

**Start:** 9/24/2021 1:00:00 PM
**End:** 9/24/2021 2:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Harris, Kimberly; Carol.Hawbaker@illinois.gov; mprater@idem.in.gov; grayj@michigan.gov; wildfange@michigan.gov; Groetschk@michigan.gov; Amy.Klei@epa.ohio.gov; SarahP.Yang@dhs.wisconsin.gov; Braverman, Carole; Jacobs, Brittany; Miller, GregoryG; Bailey, Jordan (DHHS-Contractor)

Dear colleagues from Illinois, Indiana, Michigan, Ohio, and Wisconsin,
Please join us for a briefing on the final toxicity assessment for GenX Chemicals, highlighting changes in response to public and peer review comments. We are holding this meeting only for states who have developed guidelines for GenX chemicals so that scientists can understand the nature of the changes we made. This outreach is specifically designed for those familiar with the toxicity database for GenX chemicals. The assessment itself is currently embargoed and we anticipate its release this fall. After it is released we plan a series of webinars to share results more broadly.
Please do not forward this meeting invitation further.

Thank you for your interest and we look forward to speaking with you.

Betsy
Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

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Appointment

**From:** Euling, Susan [Euling.Susan@epa.gov]
**Sent:** 10/14/2021 4:01:52 PM
**To:** Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** troubleshooting GenX
**Location:** Microsoft Teams Meeting

**Start:** 10/14/2021 6:00:00 PM
**End:** 10/14/2021 6:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Jacobs, Brittany; Miller, GregoryG

I have a meeting with Colleen and Betsy at 4:30pm and would like to gather input from you prior to that meeting. Greg, do you think you can get the answer or partial answer to #2 before this meeting?

1) Check in on GenX
    a. Post-release outreach
    b. Comms plan status
    c. HFPO-DA acyl fluoride issue and email response
2) Additional PFOA/S funding needs through Nov. 11th

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 10/6/2021 5:34:36 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; vladik_dorjets@omb.eop.gov; April.N.Kluever [April.N.Kluever@omb.eop.gov]; Cooperstein, Sharon [Cooperstein.Sharon@epa.gov]

**Subject:** GenX toxicity assessment briefing for OMB
**Location:** zoom meeting below set up by OMB so we can share the presentation

**Start:** 10/13/2021 6:00:00 PM
**End:** 10/13/2021 6:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Jacobs, Brittany; Miller, GregoryG; Euling, Susan; vladik_dorjets@omb.eop.gov; Kluever, April N. EOP/OMB; Cooperstein, Sharon

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SIP:

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 10/12/2021 2:55:16 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Akhter, Shamima [Akhter.Shamima@epa.gov]; Cunningham, Kelly [cunningham.kelly@epa.gov]; DAnglada, Lesley [DAnglada.Lesley@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Keel, Adrienne [keel.adrienne@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Ravenscroft, John [Ravenscroft.John@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Young, Melanie [Young.Melanie@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]

**Subject**: HHRAB staff meeting
**Location**: Microsoft Teams Meeting

**Start**: 10/13/2021 5:00:00 PM
**End**: 10/13/2021 5:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Akhter, Shamima; Cunningham, Kelly; DAnglada, Lesley; Donohue, Joyce; Jacobs, Brittany; Keel, Adrienne; Lindberg, Casey; Miller, GregoryG; Ravenscroft, John; Soares, Barbara; Young, Melanie

1) This week 10/12/21:
    a. Congratulations to -
        i. the PFOA/S working group leads – Brittany and Casey -- and subgroup leads and members – Greg, Joyce, Kelly -- for making a huge amount of progress in the past 3 weeks! And getting an SAB meeting date.
        ii. Lesley for drafting yet another letter to Congressman Mast (!)
        iii. John for TSM work completed (or near) with TT.
        iv. Shamima for successful FSTRAC fall meeting and updating the FSTRAC website
        v. Adrienne for giving 2 (or 3?) presentations on the 2021 HHBP update and on the CyanHABs StoryMap.
        vi. Lesley, Shamima, Barbara, Melanie, Greg – successful starts to TOs on the ICF HHRA contract.
        vii. Brittany and Greg – GenX
            1. Lots of outreach on GenX including today to OMB.
            2. Document tech edits; 508 compliance to prepare for Oct. 18th release
    b. FY21 PARS
    c. FY22 PARS
    d. IRL get together

2) Anything you need from me?

3) Heads up items for Betsy?

4) 10/12/21 OST management meeting notes:
    a. Deborah developing "objective review" summary of FY21
    b. Use or lose notifications sent out to staff with hours of use of lose leave. Need to schedule or donate by Nov. 20, 2021 or will lose.
    c. Combined Federal Campaign – looking for someone to lead. Understanding is that this is for OST only and not all of OW. Volunteers?
    d. Temperature for ecological species – raised as issue; HECD conducting survey to find out what states are doing re temperature; ecological criteria for temperature developed by states
    e. Contracts under the 1st CR – developing plan for PFAS work now.
    f. Baseline tribal review under tribal treaty rights – SHPD developed; Review by HECD
    g. FY21 PARS deadline Oct. 30th

h. PFAS Roadmap expected to be final 10/15/21
i. OST FY22 Op plans due Nov. 3rd

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Appointment

**From:** Akhter, Shamima [Akhter.Shamima@epa.gov]
**Sent:** 10/26/2021 5:48:47 PM
**To:** Akhter, Shamima [Akhter.Shamima@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]
**CC:** Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]

**Subject:** FSTRAC Webinar on EPA's Final Human Health Toxicity Values for GenX Chemicals

**Start:** 11/4/2021 4:45:00 PM
**End:** 11/4/2021 6:00:00 PM
**Show Time As:** Busy

**Recurrence:** (none)

**Required Attendees:** Jacobs, Brittany; Miller, GregoryG; Euling, Susan; Flaherty, Colleen; Behl, Betsy
**Optional Attendees:** Rodgers-Jenkins, Crystal; Burneson, Eric

**Agenda for FSTRAC Webinar Scheduled for Thursday, November 4, 2022, from 1:00 – 2:00 p.m., Eastern time**

- Welcome and Introduction
- Recent release of EPA's final Toxicity Assessment for GenX Chemicals - Brittany Jacobs, Ph.D., OW/EPA

On October 25th, the U.S. Environmental Protection Agency (EPA) released the final human health toxicity assessment for Hexafluoropropylene Oxide (HFPO) Dimer Acid and its Ammonium Salt (referred to as "GenX chemicals"). The final GenX chemicals assessment is part of EPA's efforts to increase the amount of information that is publicly available on chemicals in the PFAS class noted in EPA's Strategic Roadmap to address per- and polyfluoroalkyl substances (PFAS). The assessment presents a critical review of the available human health effects information on GenX chemicals. The assessment provides hazard identification, dose-response information, and derives toxicity values called oral reference doses (RfDs) for chronic and subchronic exposures. A toxicity assessment is a written summary of the potential health effects associated with a chemical and is similar to assessments developed under EPA's Integrated Risk Information System (IRIS). EPA plans to use this toxicity assessment and information on exposure, analytical methods and treatment to develop a Drinking Water Health Advisory in the spring of 2022. Link to the assessment: https://www.epa.gov/chemical-research/human-health-toxicity-assessments-genx-chemicals

Please use the instructions below to join the FSTRAC Webinar

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 11/1/2021 1:49:39 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** organizing the GenX outreach briefings
**Location:** Microsoft Teams Meeting

**Start:** 11/1/2021 6:30:00 PM
**End:** 11/1/2021 7:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Brittany Jacobs; Miller, GregoryG

1) GenX post-release outreach briefings this week:
    a. 11/1: NGOs (betsy will attend. conflicts with OW staff)
    b. 11/2:
        i. water stakeholders (AWWA, NACWA, etc) (2:30pm) (betsy will attend. conflicts with Biosolids national meeting)
        ii. Joe Theis (EPA/OECA) (4:30pm) (betsy will attend)
        iii. CHPAC Meeting presentation (5pm) (betsy will not attend).
    c. 11/3: OMB/Interagency Technical Workgroup (TWG) (betsy has conflict with National Biosolids meeting and will just attend the beginning. also conflicts with perchlorate meeting (can Greg attend?))
    d. 11/4:
        i. FSTRAC 12:45- 2 pm ((betsy has conflict and will not attend)
        ii. OLEM (12:30) regional call (will need to be rescheduled)
    e. ASTSWMO will need to be rescheduled. they were scheduled for 112
    f. public meeting to be determined (week on 11/8)

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# Microsoft Teams meeting

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 11/1/2021 12:03:12 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; svia@awwa.org; matt@nrwa.org; nohle@rcap.org; Euling, Susan [Euling.Susan@epa.gov]; Jennifer Palmiotto [jennifer@nrwa.org]; keegan@nrwa.org; vandehei@amwa.net; Burneson, Eric [Burneson.Eric@epa.gov]; Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; jadler@acwa-us.org; janastasio@acwa-us.org
**CC:** Chris Moody [CMoody@awwa.org]; Miller, GregoryG [Miller.Gregory@epa.gov]; Klasen, Matthew [Klasen.Matthew@epa.gov]; Sarah Buck [sbuck@rcap.org]

**Subject:** Final toxicity assessment for GenX chemicals
**Location:** Microsoft Teams Meeting

**Start:** 11/2/2021 6:30:00 PM
**End:** 11/2/2021 7:30:00 PM
**Show Time As:** Busy

**Required Attendees:** svia@awwa.org; matt@nrwa.org; nohle@rcap.org; Euling, Susan; Jennifer Palmiotto; keegan@nrwa.org; vandehei@amwa.net; Burneson, Eric; Rodgers-Jenkins, Crystal; Jacobs, Brittany; jadler@acwa-us.org; janastasio@acwa-us.org
**Optional Attendees:** Chris Moody; Sarah Buck; Miller, GregoryG; Klasen, Matthew

The U.S. Environmental Protection Agency (EPA) will release shortly the final human health toxicity assessment for Hexafluoropropylene Oxide (HFPO) Dimer Acid and its Ammonium Salt (referred to as "GenX chemicals"). The finalization of the assessment fulfills/constitutes/is part of EPA's efforts to increase the amount of information that is publicly available on chemicals in the PFAS class. A toxicity assessment is a written summary of the potential health effects associated with a chemical and is similar to assessments developed under EPA's Integrated Risk Information System (IRIS). The assessment provides hazard identification, dose-response information, and derives toxicity values called oral reference doses (RfDs) for chronic and subchronic exposures. EPA plans to use this toxicity assessment and information on exposure, analytical methods and treatment to develop a Drinking Water Health Advisory in the spring of 2022.

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Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 11/1/2021 6:10:38 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; ScottL@astswmo.org; DaniaR@astswmo.org; Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]
**CC**: Charles Reyes [CharlesR@astswmo.org]; Albert, Ryan [Albert.Ryan@epa.gov]

**Subject**: Final toxicity value for GenX chemicals (a PFAS chemical): Briefing to ASTSWMO
**Location**: Microsoft Teams Meeting

**Start**: 11/4/2021 2:00:00 PM
**End**: 11/4/2021 3:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Behl, Betsy; ScottL@astswmo.org; DaniaR@astswmo.org; Euling, Susan; Jacobs, Brittany; Miller, GregoryG; Rodgers-Jenkins, Crystal; Burneson, Eric
**Optional Attendees**: Charles Reyes; Albert, Ryan

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# Microsoft Teams meeting

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Appointment

**From**: Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent**: 3/1/2018 2:08:52 PM
**To**: Grevatt, Peter [Grevatt.Peter@epa.gov]; chanson@ecos.org; slongsworth@ecos.org; lpiper@ecos.org; Roberson, Alan [aroberson@asdwa.org]; Deirdre Mason [dmason@asdwa.org]; ron.falco@state.co.us; benzier@michigan.gov; ruchs@michigan.gov; sandeep.burman@state.mn.us; Freise, Clark [Clark.Freise@des.nh.gov]; Kernen, Brandon [Brandon.Kernen@des.nh.gov]; Pillsbury, Sarah [Sarah.Pillsbury@des.nh.gov]; amy.klei@epa.ohio.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Behrsing, Tracy [behrsing.tracy@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Sinks, Tom [Sinks.Tom@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Matthews, Lisa [Matthews.Lisa@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]
**CC**: Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Ellingboe, Randy (MDH) [randy.ellingboe@state.mn.us]; Owens, Beth [Owens.Beth@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Bonnie.Buthker@epa.ohio.gov; Michael.Allen@epa.ohio.gov; Champlin, Anna [Champlin.Anna@epa.gov]; Carrie.Rasik@epa.ohio.gov

**Subject**: PFAS Toxicity Discussion - States
**Attachments**: ECOS FED PART GENX PFBS PRESENTATION 03 06 18.pptx; PFBS BIBLIO 03 02 18.docx; GENX BIBLIO 03 02 18.docx
**Location**: DCRoomEast2123/DC-ICC-OW-OGWDW - Ex. 6 Personal Privacy (PP)

**Start**: 3/9/2018 6:00:00 PM
**End**: 3/9/2018 7:00:00 PM
**Show Time As**: Busy

**Required Attendees**: chanson@ecos.org; Sarah Grace Longsworth; lpiper@ecos.org; Roberson, Alan; dmason@asdwa.org; ron.falco@state.co.us; benzier@michigan.gov; ruchs@michigan.gov; sandeep.burman@state.mn.us; Freise, Clark; Kernen, Brandon; Pillsbury, Sarah; amy.klei@epa.ohio.gov; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Behrsing, Tracy; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina (Bahadori.Tina@epa.gov); Jones, Samantha; Lambert, Jason; Lavoie, Emma; Sinks, Tom; Harper, Ashley; Matthews, Lisa; Burneson, Eric
**Optional Attendees**: Rodan, Bruce; Mattas-Curry, Lahne; Ellingboe, Randy (MDH); Owens, Beth; Drinkard, Andrea; Raffaele, Kathleen; Bonnie.Buthker@epa.ohio.gov; Michael.Allen@epa.ohio.gov; Champlin, Anna; Carrie.Rasik@epa.ohio.gov

Please note that meeting materials will be provided next week prior to the meeting.

Adobe Connect link: Ex. 6 Personal Privacy (PP)

Appointment

**From:** Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent:** 3/1/2018 2:38:10 PM
**To:** Grevatt, Peter [Grevatt.Peter@epa.gov]; patricia.m.underwood.civ@mail.mil; Sandra Howard [Sandra.Howard@HHS.GOV]; cibulas william (ATSDR/OA/OD [wic1@cdc.gov]; christopher.weis@nih.gov; fjh1@CDC.Gov; linda.s.wennerberg@nasa.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Behrsing, Tracy [behrsing.tracy@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Sinks, Tom [Sinks.Tom@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; miller.aubrey@nih.gov
**CC:** Owens, Beth [Owens.Beth@epa.gov]; Protzel Berman, Pamela (CDC/ONDIEH/NCEH) [pxp5@cdc.gov]; Holifield, Freeman Jr Lt Col USAF SAF-IE (US) [freeman.holifield.mil@mail.mil]; Rak, Drew [andrew.rak@noblis.org]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; greg.berry@navy.mil; Vargas, Maria A CIV NAVFAC Washington [maria.vargas@navy.mil]; Johnson, Mark S CIV USARMY MEDCOM APHC (US) [mark.s.johnson.civ@mail.mil]; Suzanne_Fitzpatrick [Suzanne.Fitzpatrick@fda.hhs.gov]; Aungst, Jason [Jason.Aungst@fda.hhs.gov]; Rice, Penelope [Penelope.Rice@fda.hhs.gov]; Fenton, Suzanne (NIH/NIEHS) [E] [suzanne.fenton@nih.gov]; Leonard, Paul [leonard.paul@epa.gov]; Gervais, Gregory [Gervais.Gregory@epa.gov]; Rak, Andrew (Drew) CTR OSD OUSD ATL (US) [andrew.rak2.ctr@mail.mil]; Forrester, Tina (ATSDR/DCHI/OD) [txf5@cdc.gov]; jim.kim@omb.eop.gov; Breysse, Patrick N. (CDC/ONDIEH/NCEH) [pjb7@cdc.gov]

**Subject:** PFAS Toxicity Discussion - Federal
**Attachments:** ECOS FED PART GENX PFBS PRESENTATION 03 06 18.pptx; PFBS BIBLIO 03 02 18.docx; GENX BIBLIO 03 02 18.docx
**Location:** DCRoomEast2123/DC-ICC-OW-OGWDW - Ex. 6 Personal Privacy (PP)

**Start:** 3/9/2018 7:30:00 PM
**End:** 3/9/2018 8:30:00 PM
**Show Time As:** Busy

**Required Attendees:** patricia.m.underwood.civ@mail.mil; Howard, Sandra (OS/OASH); cibulas william (ATSDR/OA/OD; christopher.weis@nih.gov; fjh1@CDC.Gov; linda.s.wennerberg@nasa.gov; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Behrsing, Tracy; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina (Bahadori.Tina@epa.gov); Jones, Samantha; Lambert, Jason; Lavoie, Emma; Sinks, Tom; Rodan, Bruce; Mattas-Curry, Lahne; Harper, Ashley; Burneson, Eric; miller.aubrey@nih.gov
**Optional Attendees:** Owens, Beth; Protzel Berman, Pamela (CDC/ONDIEH/NCEH); Holifield, Freeman Jr Lt Col USAF SAF-IE (US); Breysse, Patrick N. (CDC/ONDIEH/NCEH); Rak, Drew; Drinkard, Andrea; Raffaele, Kathleen; greg.berry@navy.mil; Vargas, Maria A CIV NAVFAC Washington; Johnson, Mark S CIV USARMY MEDCOM APHC (US); Suzanne_Fitzpatrick; Aungst, Jason; Rice, Penelope; Fenton, Suzanne (NIH/NIEHS) [E]; Leonard, Paul; Gregory Gervais (Gervais.Gregory@epa.gov); Rak, Andrew (Drew) CTR OSD OUSD ATL (US); Forrester, Tina (ATSDR/DCHI/OD); jim.kim@omb.eop.gov

Adobe Connect Link: Ex. 6 Personal Privacy (PP)

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Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/4/2018 2:39:01 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Laurie Waite [Laurie.Waite@erg.com]; Lambert, Jason [Lambert.Jason@epa.gov]
**CC**: Champlin, Anna [Champlin.Anna@epa.gov]

**Subject**: GenX PFBS peer review discussion
**Location**: DCRoomWest5233AA/DC-CCW-OST

**Start**: 4/5/2018 6:00:00 PM
**End**: 4/5/2018 7:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Lambert, Jason; Owens, Beth; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Laurie Waite
**Optional Attendees**: Champlin, Anna

**CALL IN:** Ex. 6 Personal Privacy (PP)

**CONF ID:** Ex. 6 Personal Privacy (PP)

Kick off call for peer review of GenX and PFBS Toxicity Values

Appointment

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 4/4/2018 4:29:44 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Benson, Amy [Benson.Amy@epa.gov]
**CC**: Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]

**Subject**: Discuss Lit flow diagrams for GenX Assessment
**Attachments**: GenXn3h_documentation acb.docx; GenX_documentation acb.docx
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 4/5/2018 4:00:00 PM
**End**: 4/5/2018 4:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Lambert, Jason; Miller, Gregory; Benson, Amy
**Optional Attendees**: Babcock, Amy; Aubee, Catherine

Conference phone number:
Conference ID:

Ex. 6 Personal Privacy (PP)

I think at least Jason will need to call in

Hi Everyone,

I wanted to schedule a meeting for us to discuss the lit flow diagrams for the GenX chemicals and try to answer Amy's questions (below). If this time doesn't work I will look for a time early next week. Hopefully we can get this figured out tomorrow! Thanks in advance!

Brittany

**Comments/questions**

1) I have a placeholder for pchem properties right now – we are working on getting them declassified – okay just to keep as placeholder until this gets resolved? (Alternately, we might have some pchem prop studies that are not confidential that we can add at this time.)
2) Note that based on exclusions by SRC, irritation studies are NOT included. I hope this matches the writeups.
3) Toxicokinetics studies are counted twice (this seems to be the plan based on Jason's tagging?) = [in vivo OR in vitro] AND [TK]
4) Tala suggested we don't identify duplicates between the Chemours studies and the published literature but should we revisit this decision? (e.g., we don't have two cancer studies and it might seem strange to indicate that we do)
5) Should we add the data evaluation step to this diagram?
6) Need some additional coordination with PFBS?
7) I will combine the salt and the acid diagrams, but want to check the EN libraries for the acid and salt to make sure there are no duplicates in the published literature. Also, see green highlighted comment in the acid diagram – I didn't do a major check, but the acid has some numbers from the public lit that don't add up – combined dataset number was 16 but total numbers carried below was 4 (this included both excluded AND various on-topic information)

Appointment

**From:** Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent:** 4/11/2018 4:45:49 PM
**To:** Grevatt, Peter [Grevatt.Peter@epa.gov]; patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; greg.berry@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; Sandra Howard [Sandra.Howard@HHS.GOV]; Suzanne_Fitzpatrick [Suzanne.Fitzpatrick@fda.hhs.gov]; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; fjh1@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; Jim.kim@omb.eop.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Behrsing, Tracy [behrsing.tracy@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Moore, Alexa [moore.alexa@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Gervais, Gregory [Gervais.Gregory@epa.gov]; Leonard, Paul [leonard.paul@epa.gov]; James H [Kim@omb.eop.gov]; James_H_Kim@omb.eop.gov; Devito, Michael (NIH/NIEHS) [E] [michael.devito@nih.gov]
**CC:** South, Paul [Paul.South@fda.hhs.gov]; Glover, Sam (CDC/NIOSH/DART) [seg3@cdc.gov]; Corack, Jennifer M CIV NAVFAC Atlantic, EV [jennifer.corack@navy.mil]; Anita.K.Meyer@usace.army.mil; Smith, James Stanley CIV USN NAVMCPUBHLTHCEN PORS (US) [james.s.smith454.civ@mail.mil]; Soares, Barbara [soares.barbara@epa.gov]; Speth, Thomas [Speth.Thomas@epa.gov]; Birnbaum, Linda (NIH/NIEHS) [E] [birnbaumls@niehs.nih.gov]; MARCEL, BARRY J DR-02 USAF AFMC USAFSAM/OECC [barry.marcel@us.af.mil]

**Subject:** PFAS Toxicity Discussion-Federal Briefing #2
**Attachments:** ECOS FED PART GENX PFBS PRESENTATION 4.27.18A.pdf
**Location:** 2123 EPA East - Peter Grevatt's conference line - **Ex. 6 Personal Privacy (PP)**

**Start:** 5/2/2018 7:00:00 PM
**End:** 5/2/2018 8:30:00 PM
**Show Time As:** Busy

**Required Attendees:** patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; greg.berry@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; Sandra.Howard@hhs.gov; Suzanne_Fitzpatrick; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; fjh1@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; Jim.kim@omb.eop.gov; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Burneson, Eric; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Harper, Ashley; Drinkard, Andrea; behrsing.tracy@epa.gov; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina; Jones, Samantha; Lambert, Jason; Lavoie, Emma; Owens, Beth; Moore, Alexa; Champlin, Anna; Rodan, Bruce; Mattas-Curry, Lahne; Raffaele, Kathleen; Gervais, Gregory; Leonard, Paul; James H; James_H_Kim@omb.eop.gov; Devito, Michael (NIH/NIEHS) [E]
**Optional Attendees:** South, Paul; Glover, Sam (CDC/NIOSH/DART); Corack, Jennifer M CIV NAVFAC Atlantic, EV; Anita.K.Meyer@usace.army.mil; Smith, James Stanley CIV USN NAVMCPUBHLTHCEN PORS (US); Soares, Barbara; Speth, Thomas; Birnbaum, Linda (NIH/NIEHS) [E]; MARCEL, BARRY J DR-02 USAF AFMC USAFSAM/OECC

If you are planning to participate here on site at EPA, inform Hanna Holsinger. If you come in person, please enter EPA at the 1201 Constitution Avenue, NW entrance. Please make sure that you have a valid photo ID. After you complete the security clearance, have the security guard call Paula at 564-3773 to be escorted to conference room 2123.

Adobe Connect Link: Ex. 6 Personal Privacy (PP)
Meeting materials will be provided prior to the meeting.

Provided are links to chemical-specific pages for the studies cited:

GenX: https://hero.epa.gov/hero/index.cfm/project/page/project_id/2627
PFBS: https://hero.epa.gov/hero/index.cfm/project/page/project_id/2610

Appointment

**From**: Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent**: 5/3/2018 5:54:17 PM
**To**: Grevatt, Peter [Grevatt.Peter@epa.gov]; patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; greg.berry@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; Sandra Howard [Sandra.Howard@HHS.GOV]; Suzanne_Fitzpatrick [Suzanne.Fitzpatrick@fda.hhs.gov]; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; fjh1@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; Kim@omb.eop.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Behrsing, Tracy [behrsing.tracy@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Moore, Alexa [moore.alexa@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Gervais, Gregory [Gervais.Gregory@epa.gov]; Leonard, Paul [leonard.paul@epa.gov]; michael.devito@nih.gov; Paul.South@fda.hhs.gov; seg3@cdc.gov; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; Soares, Barbara [soares.barbara@epa.gov]; Speth, Thomas [Speth.Thomas@epa.gov]; birnbaumls@niehs.nih.gov; barry.marcel@us.af.mil; mfocazio@usgs.gov; James_H_Kim@omb.eop.gov; Lehman, Rachel [lehman.rachel@epa.gov]

**Subject**: PFAS Toxicity Discussion-Federal Briefing #2 Part 2-PFBS Presentation
**Attachments**: ECOS FED PART GENX PFBS PRESENTATION 4.27.18A.PDF; charge questions genx pfbs 04 23 18.docx; Updated federal partner engagement schedule 5-3-18.docx
**Location**: Webinar - Call in information and Webinar link will be provided shortly

**Start**: 5/4/2018 3:00:00 PM
**End**: 5/4/2018 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; greg.berry@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; Sandra.Howard@hhs.gov; Suzanne_Fitzpatrick; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; fjh1@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; Kim@omb.eop.gov; Grevatt, Peter; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Burneson, Eric; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Harper, Ashley; Drinkard, Andrea; Behrsing, Tracy; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina; Jones, Samantha; Lambert, Jason; Lavoie, Emma; Owens, Beth; Moore, Alexa; Champlin, Anna; Rodan, Bruce; Mattas-Curry, Lahne; Raffaele, Kathleen; Gervais, Gregory; Leonard, Paul; michael.devito@nih.gov; Paul.South@fda.hhs.gov; seg3@cdc.gov; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; Soares, Barbara; Speth, Thomas; birnbaumls@niehs.nih.gov; barry.marcel@us.af.mil; mfocazio@usgs.gov; James_H_Kim@omb.eop.gov; Lehman, Rachel

# Please see updated schedule and draft peer review charge questions

Adobe con
Call in #: +

Ex. 6 Personal Privacy (PP)

Conference ID: Ex. 6 Personal Privacy (PP)

Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 6/21/2018 1:00:17 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Lowit, Anna [Lowit.Anna@epa.gov]; Laessig, Susan [Laessig.Susan@epa.gov]; Hamernik, Karen [Hamernik.Karen@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Murphy, Deirdre [Murphy.Deirdre@epa.gov]; Vasu, Amy [Vasu.Amy@epa.gov]; Hoyer, Marion [hoyer.marion@epa.gov]; Axelrad, Daniel [Axelrad.Daniel@epa.gov]; Dzubow, Rebecca [Dzubow.Rebecca@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Flowers, Lynn [Flowers.Lynn@epa.gov]; Doa, Maria [Doa.Maria@epa.gov]; Cassidy, Meghan [Cassidy.Meghan@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Gehlhaus, Martin [Gehlhaus.Martin@epa.gov]; Pollard, Solomon [Pollard.Solomon@epa.gov]; Adams, Glenn [Adams.Glenn@epa.gov]; Mangino, Mario [mangino.mario@epa.gov]; Milburn, Anna [Milburn.Anna@epa.gov]; Schumacher, Kelly [Schumacher.Kelly@epa.gov]; Benson, Bob [Benson.Bob@epa.gov]; Hiatt, Gerald [Hiatt.Gerald@epa.gov]; Kissinger, Lon [Kissinger.Lon@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Maddaloni, Mark [Maddaloni.Mark@epa.gov]; rogers, rick [rogers.rick@epa.gov]; Allenbach, Becky [Allenbach.Becky@epa.gov]; Harris, Kimberly [harris.kimberly@epa.gov]; Morton, Michael [Morton.Michael@epa.gov]; Shields, Amy [Shields.Amy@epa.gov]; Bahrman, Sarah [Bahrman.Sarah@epa.gov]; Small, Matthew [Small.Matthew@epa.gov]; Anderson-Carnahan, Linda [Anderson-Carnahan.Linda@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Weber, Robert [Weber.Robert@epa.gov]; Kidwell, JessicaL [Kidwell.JessicaL@epa.gov]; Bennett, James [bennett.james@epa.gov]; Reinhart, Roger [Reinhart.Roger@epa.gov]; Rowsey, Kevin [rowsey.kevin@epa.gov]; Konfirst, Matthew [konfirst.matthew@epa.gov]; Caporale, Cynthia [Caporale.Cynthia@epa.gov]; Bachman, Brenda [bachman.brenda@epa.gov]; Gettle, Jeaneanne [Gettle.Jeaneanne@epa.gov]; Walker, Mary [walker.mary@epa.gov]; Jones, Aaryn [Jones.Aaryn@epa.gov]; Hall, Renea [Hall.Renea@epa.gov]; Shell, Karrie-Jo [Shell.Karrie-Jo@epa.gov]; Davis, Molly [Davis.Molly@epa.gov]; Mitchell, Ken [Mitchell.Ken@epa.gov]; Kemker, Carol [Kemker.Carol@epa.gov]; Jones-Johnson, Shea [Jones-Johnson.Shea@epa.gov]

**Subject**: Discussion of EPA intra-agency comments on GenX Chemicals Toxicity Value Assessment CALL-IN Ex. 6 Personal Privacy (PP) code: Ex. 6 Personal Privacy (PP)
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 6/28/2018 6:00:00 PM
**End**: 6/28/2018 7:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Miller, Gregory; Lowit, Anna; Laessig, Susan; Hamernik, Karen; Raffaele, Kathleen; Murphy, Deirdre; Vasu, Amy; Hoyer, Marion; Axelrad, Daniel; Dzubow, Rebecca; Euling, Susan; Flowers, Lynn; Doa, Maria; Cassidy, Meghan; Olsen, Marian; Gehlhaus, Martin; Pollard, Solomon; Adams, Glenn; Mangino, Mario; Milburn, Anna; Schumacher, Kelly; Benson, Bob; Hiatt, Gerald; Kissinger, Lon; Strong, Jamie; Jacobs, Brittany
**Optional Attendees**: Maddaloni, Mark; rogers, rick; Allenbach, Becky; Harris, Kimberly; Morton, Michael; Shields, Amy; Bahrman, Sarah; Small, Matthew; Anderson-Carnahan, Linda; Bahadori, Tina; Jones, Samantha; Weber, Robert; Kidwell, JessicaL; Bennett, James; Reinhart, Roger; Rowsey, Kevin; Konfirst, Matthew; Caporale, Cynthia; Bachman, Brenda; Gettle, Jeaneanne; Walker, Mary; Jones, Aaryn; Hall, Renea; Shell, Karrie-Jo; Davis, Molly; Mitchell, Ken; Kemker, Carol; Jones-Johnson, Shea

Join by Phone
Toll number: Ex. 6 Personal Privacy (PP)

Thank you all for providing excellent comments and feedback on the GenX chemicals toxicity assessment. We appreciate your thoughtful comments and carefully considered all your comments as well as interagency comments in our revisions to the document. The purpose of this call is to discuss the range/types of comments received and how we addressed them. We plan to send the GenX chemicals assessment out for peer review on June 22nd, in order to meet our aggressive schedule. We appreciate your understanding and look forward to our discussion.

This invite is being sent to the Agency Review Contacts listed below. Please feel free to include others we may have overlooked. Thank you!

**Agency Review Contacts**
**Office of Water** Greg Miller
**Office of Chemical Safety and Pollution Prevention**
- **Office of Pesticide Programs** Anna Lowit
- **Office of Pollution Prevention and Toxics** Susan Laessig
- **Office of Science Coordination and Policy** Karen Hamernik

**Office of Land and Emergency Management** Kathleen Raffaele
**Office of Air and Radiation**
- **Office of Air Quality Protection & Standards** Deirdre Murphy and Amy Vasu
- **Office of Transportation & Air Quality** Marion Hoyer

**Office of Policy** Dan Axelrad
**Office of Children's Health Protection** Rebecca Dzubow and Sue Euling
**Office of Research and Development** Lynn Flowers
**Region 1** Meghan Cassidy
**Region 2** Marian Olsen
**Region 3** Martin Gehlhaus
**Region 4** Solomon Pollard and Glenn Adams
**Region 5** Mario Mangino
**Region 6** Anna Milburn
**Region 7** Kelly Schumacher
**Region 8** Bob Benson
**Region 9** Gerald Hiatt
**Region 10** Lon Kissinger

**Table of PFAS Regional Coordinators**

| | | |
|---|---|---|
| Region 1 | Meghan Cassidy | Cassidy.Meghan@epa.gov |
| Region 2 | Mark Maddaloni | Maddaloni.Mark@epa.gov |
| Region 3 | Rick Rogers | rogers.rick@epa.gov |
| Region 4 | Becky Allenbach | Allenbach.Becky@epa.gov |
| Region 5 | Kim Harris | harris.kimberly@epa.gov |
| Region 6 | Michael Morton | Morton.michael@Epa.gov |
| Region 7 | Amy Shields | Shields.Amy@epa.gov |
| Region 8 | Sarah Bahrman | Bahrman.Sarah@epa.gov |
| Region 9 | Matthew Small | Small.Matthew@epa.gov |
| Region 10 | Linda Anderson-Carnahan | Anderson-Carnahan.Linda@epa.gov |

Appointment

**From**: Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent**: 6/19/2018 5:13:39 PM
**To**: Grevatt, Peter [Grevatt.Peter@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]
**CC**: Crawford, Tiffany [Crawford.Tiffany@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Prep for GenX Peer Review
**Location**: 2203 EPA East. Teleconference: Ex. 6 Personal Privacy (PP)

**Start**: 6/19/2018 8:30:00 PM
**End**: 6/19/2018 9:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Grevatt, Peter; Mclain, Jennifer; Nagle, Deborah; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Miller, Gregory; Bahadori, Tina (Bahadori.Tina@epa.gov); Gillespie, Andrew; Lambert, Jason; Holsinger, Hannah
**Optional Attendees**: Crawford, Tiffany; Owens, Beth

Purpose: touch base on final logistics prior to GenX peer review

Appointment

**From:** Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent:** 6/13/2018 4:46:09 PM
**To:** Grevatt, Peter [Grevatt.Peter@epa.gov]; patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; wanda.holmes@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; barry.marcel@us.af.mil; Sandra Howard [Sandra.Howard@HHS.GOV]; Suzanne_Fitzpatrick [Suzanne.Fitzpatrick@fda.hhs.gov]; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; Paul.South@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; michael.devito@nih.gov; birnbaumls@niehs.nih.gov; fjh1@cdc.gov; seg3@cdc.gov; eaw0@cdc.gov; iwa6@cdc.gov; oii2@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; James_H_Kim@omb.eop.gov; mfocazio@usgs.gov; Terra.irons@va.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Behrsing, Tracy [behrsing.tracy@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Moore, Alexa [moore.alexa@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Gervais, Gregory [Gervais.Gregory@epa.gov]; Leonard, Paul [leonard.paul@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Speth, Thomas [Speth.Thomas@epa.gov]; Lehman, Rachel [lehman.rachel@epa.gov]; michael.j.quinn104.civ@mail.mil; Birchfield, Norman [Birchfield.Norman@epa.gov]
**CC:** Albert, Ryan [Albert.Ryan@epa.gov]; Foster, Stiven [Foster.Stiven@epa.gov]; Libelo, Laurence [Libelo.Laurence@epa.gov]; Cooke, Maryt [Cooke.Maryt@epa.gov]; Burchette, John [Burchette.John@epa.gov]; Davis, Todd H. [Davis.ToddH@epa.gov]

**Subject:** PFAS Toxicity Assessment Discussion
**Attachments:** GenX PFBS_External Peer Review_charge questions_06 18 18 FINAL.docx
**Location:** DCRoomEast2123/DC-ICC-OW-OGWDW - Ex. 6 Personal Privacy (PP)

**Start:** 6/20/2018 5:00:00 PM
**End:** 6/20/2018 6:30:00 PM
**Show Time As:** Busy

**Required Attendees:** patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; wanda.holmes@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; barry.marcel@us.af.mil; Sandra.Howard@hhs.gov; Suzanne_Fitzpatrick; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; Paul.South@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; michael.devito@nih.gov; birnbaumls@niehs.nih.gov; fjh1@cdc.gov; seg3@cdc.gov; eaw0@cdc.gov; iwa6@cdc.gov; oii2@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; James_H_Kim@omb.eop.gov; mfocazio@usgs.gov; Terra.irons@va.gov; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Burneson, Eric; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Harper, Ashley; Drinkard, Andrea; Behrsing, Tracy; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina; Jones, Samantha; Lambert, Jason; Lavoie, Emma; Owens, Beth; Moore, Alexa; Champlin, Anna; Rodan, Bruce; Mattas-Curry, Lahne; Raffaele, Kathleen; Gervais, Gregory; Leonard, Paul; Soares, Barbara; Speth, Thomas; Lehman, Rachel; michael.j.quinn104.civ@mail.mil; Birchfield, Norman
**Optional Attendees:** Albert, Ryan; Foster, Stiven; Libelo, Laurence; Cooke, Maryt; Burchette, John; Davis, Todd H.

Agenda: PFAS Toxicity Development Updates

1) Introduction and general questions re process and reviewers (10 min)
2) GenX chemicals assessment (20 min)
3) PFBS assessment (30 min)
4) Charge questions (30 min)

Appointment

**From**: Jones, Samantha [Jones.Samantha@epa.gov]
**Sent**: 4/24/2018 8:42:09 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Lowit, Anna [Lowit.Anna@epa.gov]; Laessig, Susan [Laessig.Susan@epa.gov]; Hamernik, Karen [Hamernik.Karen@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Murphy, Deirdre [Murphy.Deirdre@epa.gov]; Vasu, Amy [Vasu.Amy@epa.gov]; Hoyer, Marion [hoyer.marion@epa.gov]; Axelrad, Daniel [Axelrad.Daniel@epa.gov]; Dzubow, Rebecca [Dzubow.Rebecca@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Cassidy, Meghan [Cassidy.Meghan@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Gehlhaus, Martin [Gehlhaus.Martin@epa.gov]; Pollard, Solomon [Pollard.Solomon@epa.gov]; Adams, Glenn [Adams.Glenn@epa.gov]; Mangino, Mario [mangino.mario@epa.gov]; Milburn, Anna [Milburn.Anna@epa.gov]; Schumacher, Kelly [Schumacher.Kelly@epa.gov]; Hiatt, Gerald [Hiatt.Gerald@epa.gov]; Kissinger, Lon [Kissinger.Lon@epa.gov]; Flowers, Lynn [Flowers.Lynn@epa.gov]; Benson, Bob [Benson.Bob@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Maddaloni, Mark [Maddaloni.Mark@epa.gov]; rogers, rick [rogers.rick@epa.gov]; Allenbach, Becky [Allenbach.Becky@epa.gov]; Harris, Kimberly [harris.kimberly@epa.gov]; Morton, Michael [Morton.Michael@epa.gov]; Shields, Amy [Shields.Amy@epa.gov]; Bahrman, Sarah [Bahrman.Sarah@epa.gov]; Small, Matthew [Small.Matthew@epa.gov]; Anderson-Carnahan, Linda [Anderson-Carnahan.Linda@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]
**CC**: Cooperstein, Sharon [Cooperstein.Sharon@epa.gov]; Johnson, Ann [Johnson.Ann@epa.gov]; Metz, Chloe [Metz.Chloe@epa.gov]; Braverman, Carole [braverman.carole@epa.gov]; Davison, Jenny [davison.jenny@epa.gov]; Maurice, Charles [maurice.charles@epa.gov]; Mendez, Thomas [mendez.thomas@epa.gov]; Moore, Tammy [moore.tammy@epa.gov]; Newman, Erin [newman.erin@epa.gov]; Poleck, Thomas [poleck.thomas@epa.gov]; Prendiville, Timothy [prendiville.timothy@epa.gov]; Seely, David [seely.david@epa.gov]; Shoven, Heather [shoven.heather@epa.gov]; Valberg, Amelia [valberg.amelia@epa.gov]; Wilson, Jennifer [wilson.jenniferA@epa.gov]; Suero, Maryann [suero.maryann@epa.gov]; Miller, Amy [Miller.Amy@epa.gov]; Li, Corine [Li.Corine@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; 'mmaddalo22@gmail.com' [mmaddalo22@gmail.com]; Allen, Elizabeth [allen.elizabeth@epa.gov]; Jankowski, Mark [jankowski.mark@epa.gov]; Repasky, Ted [repasky.ted@epa.gov]; Bachman, Brenda [bachman.brenda@epa.gov]; Thomas, Lee [Thomas.Lee@epa.gov]; Speth, Thomas [Speth.Thomas@epa.gov]; brendabachman@msn.com

**Subject**: Overview of GenX and PFBS assessments - prior to internal review (NOTE: revised materials and Adobe Connect link added)
**Attachments**: GENX PFBS PRESENTATION_Overview for Internal Agency Reviewers_FINAL_5-01-18.pptx
**Location**: AUDIO - Skype (link and # in body of invite); VIEWING OF SLIDES - Adobe Connect (link in body of invite)

**Start**: 5/1/2018 1:00:00 PM
**End**: 5/1/2018 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Lowit, Anna; Laessig, Susan; Hamernik, Karen; Raffaele, Kathleen; Murphy, Deirdre; Vasu, Amy; Hoyer, Marion; Axelrad, Daniel; Dzubow, Rebecca; Euling, Susan; Cassidy, Meghan; Olsen, Marian; Gehlhaus, Martin; Pollard, Solomon; Adams, Glenn; Mangino, Mario; Milburn, Anna; Schumacher, Kelly; Hiatt, Gerald; Kissinger, Lon; Lynn Flowers; Bob Benson; 'Jamie Strong'; Jacobs, Brittany; Behl, Betsy; Owens, Beth; Lambert, Jason; Bahadori, Tina; Lavoie, Emma; Harper, Ashley; Champlin, Anna; Maddaloni, Mark; rogers, rick; Allenbach, Becky; Harris, Kimberly; Morton, Michael; Shields, Amy; Bahrman, Sarah; Small, Matthew; Anderson-Carnahan, Linda; Gillespie, Andrew
**Optional Attendees**: Cooperstein, Sharon; Ann Johnson; Metz, Chloe; Braverman, Carole; Davison, Jenny; Maurice, Charles; Mendez, Thomas; Moore, Tammy; Newman, Erin; Poleck, Thomas; Prendiville, Timothy; Seely, David; Shoven, Heather; Valberg, Amelia; Wilson, Jennifer; Suero, Maryann; Miller, Amy; Li, Corine; Holsinger, Hannah; Grevatt, Peter; Mclain, Jennifer; Burneson, Eric; 'mmaddalo22@gmail.com'; Allen, Elizabeth; Jankowski, Mark; Repasky, Ted; Bachman, Brenda; Thomas, Lee; Speth, Thomas; brendabachman@msn.com

**UPDATE#2: ADOBE CONNECT LINK ADDED. Please note that for the call on Tuesday morning, use Adobe Connect to view the slides, and use the Skype app or phone number for audio. Additionally, a revised version of the slides has been provided, please use the file labeled as "FINAL". These will be shared via Adobe Connect.**

UPDATE#1: OVERVIEW MATERIALS ADDED

For viewing the slides: use Adobe Connect link

- **http://epawebconferencing.acms.com/** Ex. 6 Personal Privacy (PP)

For audio: use Skype phone number or app → Toll number: Ex. 6 Personal Privacy (PP) access code: Ex. 6 Personal Privacy (PP) (Find a local number) Conference ID: 6305503 (same as access code); Join Skype Meeting (Trouble Joining? Try Skype Web App)

---

Hi all,

As noted below, we are offering a conference call to provide an overview of the GenX and PFBS assessments and answer any questions prior to the internal Agency review of the assessments. Overview materials will be added to the invite prior to the call.

Thank you,
OW/OST and ORD/NCEA

---

Dear Internal Agency Review contacts,

As you know, in response to an urgent and priority request by the Administrator, OW/OST and ORD/NCEA have taken the lead to develop human health toxicity values for GenX and PFBS, respectively. These two assessments are expanding on existing work from OPPT (GenX) and ORD (PFBS). Some background information is attached. We will be offering an opportunity for rapid review of these assessments starting on 5/07/18. Please identify the expert reviewers in your region or program to prepare for this rapid review – you will have one week for this review, and each program/region is expected to provide one consolidated set of comments. The timeline is short as the Administrator has asked for these assessments and toxicity values to be prepared in a 6-month period including peer review. We are scheduling a conference call on or about 4/30/18 to provide an overview of the assessments and answer any questions.

The list of review coordinators for your organizations is below. Unless we hear from you otherwise, these individuals will be our points of contact for the review.

Please forward your questions to Ashley Harper. We will review and respond accordingly.

Thank you,
OW/OST and ORD/NCEA

**Agency Review Contacts**

**Office of Water** Greg Miller

**Office of Chemical Safety and Pollution Prevention**

- **Office of Pesticide Programs** Anna Lowit
- **Office of Pollution Prevention and Toxics** Susan Laessig
- **Office of Science Coordination and Policy** Karen Hamernik

**Office of Land and Emergency Management** Kathleen Raffaele

**Office of Air and Radiation**

- **Office of Air Quality Protection & Standards** Deirdre Murphy and Amy Vasu
- **Office of Transportation & Air Quality** Marion Hoyer

**Office of Policy** Dan Axelrad

**Office of Children's Health Protection** Rebecca Dzubow and Sue Euling

**Office of Research and Development/Office of Science Policy** Lynn Flowers

**Region 1** Meghan Cassidy

**Region 2** Marian Olsen

**Region 3** Martin Gehlhaus

**Region 4** Solomon Pollard and Glenn Adams

**Region 5** Mario Mangino

**Region 6** Anna Milburn

**Region 7** Kelly Schumacher

**Region 8** Bob Benson

**Region 9** Gerald Hiatt

**Region 10** Lon Kissinger

Appointment

**From:** Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent:** 8/2/2018 2:22:12 PM
**To:** Grevatt, Peter [Grevatt.Peter@epa.gov]; patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; wanda.holmes@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; barry.marcel@us.af.mil; Sandra Howard [Sandra.Howard@HHS.GOV]; Suzanne_Fitzpatrick [Suzanne.Fitzpatrick@fda.hhs.gov]; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; Paul.South@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; michael.devito@nih.gov; birnbaumls@niehs.nih.gov; fjh1@cdc.gov; seg3@cdc.gov; eaw0@cdc.gov; iwa6@cdc.gov; oii2@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; James_H_Kim@omb.eop.gov; mfocazio@usgs.gov; Terra.irons@va.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Moore, Alexa [moore.alexa@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Gervais, Gregory [Gervais.Gregory@epa.gov]; Leonard, Paul [leonard.paul@epa.gov]; Foster, Stiven [Foster.Stiven@epa.gov]; Libelo, Laurence [Libelo.Laurence@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Lehman, Rachel [lehman.rachel@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Murphy, Elizabeth [Murphy.Elizabeth@epa.gov]; Lan, Alexis [lan.alexis@epa.gov]
**CC:** Burchette, John [Burchette.John@epa.gov]; Baier-Anderson, Caroline [Baier-Anderson.Caroline@epa.gov]; Cooke, Maryt [Cooke.Maryt@epa.gov]; Birchfield, Norman [Birchfield.Norman@epa.gov]; Moore, Beth [Beth.Moore@em.doe.gov]; Putzrath, Resha M CIV USN NAVMCPUBHLTHCEN PORS (US) [resha.m.putzrath.civ@mail.mil]; Margo_Schwab@omb.eop.gov; Speth, Thomas [Speth.Thomas@epa.gov]; Vlad Dorjets (Vladik_Dorjets@omb.eop.gov) [Vladik_Dorjets@omb.eop.gov]; Jones, Danielle Y. EOP/OMB [Danielle_Y_Jones@omb.eop.gov]; Barringer, Jody M. EOP/OMB [Jody_M._Barringer@omb.eop.gov]; Gamache, Christopher D. EOP/OMB [Christopher_D_Gamache@omb.eop.gov]

**Subject:** PFAS Toxicity Assessment Discussion-Federal
**Attachments:** Peer Review Report_Task 0008_GenX_Final_7-25-18.pdf; Peer Review Report_Task 0008_PFBS_Final.pdf; PFAS stakeholder briefing_PFBS and GenX Chemicals_8-27-18_Final.pptx
**Location:** DCRoomEast2123/DC-ICC-OW-OGWDW - Ex. 6 Personal Privacy (PP)

**Start:** 8/27/2018 1:00:00 PM
**End:** 8/27/2018 2:30:00 PM
**Show Time As:** Tentative

**Required Attendees:** patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; wanda.holmes@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; barry.marcel@us.af.mil; Sandra.Howard@hhs.gov; Suzanne_Fitzpatrick; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; Paul.South@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; michael.devito@nih.gov; birnbaumls@niehs.nih.gov; fjh1@cdc.gov; seg3@cdc.gov; eaw0@cdc.gov; iwa6@cdc.gov; oii2@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; James_H_Kim@omb.eop.gov; mfocazio@usgs.gov; Terra.irons@va.gov; Grevatt, Peter; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Burneson, Eric; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Harper, Ashley; Drinkard, Andrea; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina; Jones, Samantha; Lambert, Jason;

Lavoie, Emma; Owens, Beth; Moore, Alexa; Champlin, Anna; Rodan, Bruce; Mattas-Curry, Lahne; Raffaele, Kathleen; Gervais, Gregory; Leonard, Paul; Foster, Stiven; Libelo, Laurence; Soares, Barbara; Lehman, Rachel; Albert, Ryan; Murphy, Elizabeth; Lan, Alexis

**Optional Attendees:** Burchette, John; Baier-Anderson, Caroline; Cooke, Maryt; Birchfield, Norman; Moore, Beth; Putzrath, Resha M CIV USN NAVMCPUBHLTHCEN PORS (US); Margo_Schwab@omb.eop.gov; Speth, Thomas; Vlad Dorjets (Vladik_Dorjets@omb.eop.gov); Jones, Danielle Y. EOP/OMB; Barringer, Jody M. EOP/OMB; Gamache, Christopher D. EOP/OMB

Adobe Connec **Ex. 6 Personal Privacy (PP)**

Appointment

**From**: Nagle, Deborah [Nagle.Deborah@epa.gov]
**Sent**: 8/8/2018 8:01:40 PM
**To**: Nagle, Deborah [Nagle.Deborah@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Lalley, Cara [Lalley.Cara@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]
**CC**: Crawford, Tiffany [Crawford.Tiffany@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]

**Subject**: Pre-brief GenX Toxicity Values (BRIEFING MATERIALS ATTACHED)
**Attachments**: GenX Pre-brief2018-08-08-154057.pdf; Briefing for AAs on GenX Chemicals Toxicity Assessment combined_draft 090618.pptx
**Location**: DCRoomWest5233B/DC-CCW-OST

**Start**: 9/6/2018 7:00:00 PM
**End**: 9/6/2018 7:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Grevatt, Peter; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Miller, Gregory; flaherty. colleen (Flaherty.Colleen@epa.gov); Holsinger, Hannah; Burneson, Eric; Mclain, Jennifer; Henry, Tala; Wadlington, Christina; Lalley, Cara; Champlin, Anna; Jones, Samantha; Bahadori, Tina; Lambert, Jason; Owens, Beth
**Optional Attendees**: Crawford, Tiffany; Tiago, Joseph; Albert, Ryan

**Adding call-in number 9/5/2018**

**Conference cal**
**Conference ID:** Ex. 6 Personal Privacy (PP)

POC: Betsy Behl
Tele: 566-0788

Appointment

**From**: Jones, Samantha [Jones.Samantha@epa.gov]
**Sent**: 8/7/2018 3:36:59 AM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Lowit, Anna [Lowit.Anna@epa.gov]; Laessig, Susan [Laessig.Susan@epa.gov]; Hamernik, Karen [Hamernik.Karen@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Murphy, Deirdre [Murphy.Deirdre@epa.gov]; Vasu, Amy [Vasu.Amy@epa.gov]; Hoyer, Marion [hoyer.marion@epa.gov]; Axelrad, Daniel [Axelrad.Daniel@epa.gov]; Dzubow, Rebecca [Dzubow.Rebecca@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Flowers, Lynn [Flowers.Lynn@epa.gov]; Cassidy, Meghan [Cassidy.Meghan@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Gehlhaus, Martin [Gehlhaus.Martin@epa.gov]; Pollard, Solomon [Pollard.Solomon@epa.gov]; Adams, Glenn [Adams.Glenn@epa.gov]; Mangino, Mario [mangino.mario@epa.gov]; Milburn, Anna [Milburn.Anna@epa.gov]; Schumacher, Kelly [Schumacher.Kelly@epa.gov]; Benson, Bob [Benson.Bob@epa.gov]; Kissinger, Lon [Kissinger.Lon@epa.gov]; Maddaloni, Mark [Maddaloni.Mark@epa.gov]; rogers, rick [rogers.rick@epa.gov]; Allenbach, Becky [Allenbach.Becky@epa.gov]; Harris, Kimberly [harris.kimberly@epa.gov]; Morton, Michael [Morton.Michael@epa.gov]; Shields, Amy [Shields.Amy@epa.gov]; Bahrman, Sarah [Bahrman.Sarah@epa.gov]; Small, Matthew [Small.Matthew@epa.gov]; Anderson-Carnahan, Linda [Anderson-Carnahan.Linda@epa.gov]; Allen, Elizabeth [allen.elizabeth@epa.gov]; Bachman, Brenda [bachman.brenda@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Thayer, Kris [thayer.kris@epa.gov]; Radke-Farabaugh, Elizabeth [radke-farabaugh.elizabeth@epa.gov]; Kraft, Andrew [Kraft.Andrew@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]
**CC**: Foster, Stiven [Foster.Stiven@epa.gov]; Yaquian-Luna, Jose [yaquian-luna.josea@epa.gov]; Cooperstein, Sharon [Cooperstein.Sharon@epa.gov]; Johnson, Ann [Johnson.Ann@epa.gov]; Birchfield, Norman [Birchfield.Norman@epa.gov]; Fitz-James, Schatzi [Fitz-James.Schatzi@epa.gov]; Libelo, Laurence [Libelo.Laurence@epa.gov]; Cooke, Maryt [Cooke.Maryt@epa.gov]; Hines, Ronald [Hines.Ronald@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Hodes, Colette [Hodes.Colette@epa.gov]; Lowery, Brigid [Lowery.Brigid@epa.gov]; Gaines, Linda [Gaines.Linda@epa.gov]; Jankowski, Mark [jankowski.mark@epa.gov]; Repasky, Ted [repasky.ted@epa.gov]; O'Connor, Daniel [oconnor.daniel@epa.gov]; Weber, Robert [Weber.Robert@epa.gov]; Messinger, Lisa [Messinger.Lisa@epa.gov]; Kidwell, JessicaL [Kidwell.JessicaL@epa.gov]; Nicoski, Dan [Nicoski.Dan@epa.gov]; Jones, Aaryn [Jones.Aaryn@epa.gov]; Davis, Molly [Davis.Molly@epa.gov]; Shell, Karrie-Jo [Shell.Karrie-Jo@epa.gov]; Thomas, Brett [Thomas.Brett@epa.gov]; France, Danny [France.Danny@epa.gov]; Wellborn, Floyd [Wellborn.Floyd@epa.gov]; Mitchell, Ken [Mitchell.Ken@epa.gov]; Kemker, Carol [Kemker.Carol@epa.gov]; Hall, Renea [Hall.Renea@epa.gov]; Campbell-Dunbar, Shawneille [Campbell-Dunbar.Shawneille@epa.gov]; Smith, Brian [Smith.Brian@epa.gov]

**Subject**: HOLD for PFAS: GenX and PFBS overview of peer review comments - SLIDES ADDED
**Attachments**: Peer Review Report_Task 0008_GenX_Final_7-25-18.pdf; Peer Review Report_Task 0008_PFBS_Final.pdf; PFAS stakeholder briefing_PFBS and GenX Chemicals_8-27-18.pptx
**Location**: Skype Ex. 6 Personal Privacy (PP) Room in DC RRB 51161

**Start**: 8/20/2018 5:00:00 PM
**End**: 8/20/2018 6:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Miller, Gregory; Lowit, Anna; Laessig, Susan; Hamernik, Karen; Raffaele, Kathleen; Murphy, Deirdre; Vasu, Amy; Hoyer, Marion; Axelrad, Daniel; Dzubow, Rebecca; Euling, Susan; Lynn Flowers; Cassidy, Meghan; Olsen, Marian; Martin Gehlhaus; Pollard, Solomon; Adams, Glenn; Mangino, Mario; Milburn, Anna; Schumacher, Kelly; Bob Benson; Kissinger, Lon; Maddaloni, Mark; rogers, rick; Allenbach, Becky; Harris, Kimberly; Morton, Michael; Shields, Amy; Bahrman, Sarah; Small, Matthew; Anderson-Carnahan, Linda; Allen, Elizabeth; Bachman, Brenda; Bahadori, Tina; Owens, Beth; Lambert, Jason; Champlin, Anna; Thayer, Kris; Radke-Farabaugh, Elizabeth; Kraft, Andrew; Behl, Betsy; Jamie Strong; Jacobs, Brittany
**Optional Attendees**: Foster, Stiven; Yaquian-Luna, Jose; Cooperstein, Sharon; Ann Johnson; Birchfield, Norman; Fitz-James, Schatzi; Libelo, Laurence; Cooke, Maryt; Hines, Ronald; Gillespie, Andrew; Hodes, Colette; Lowery, Brigid; Gaines, Linda; Jankowski, Mark; Repasky, Ted; O'Connor, Daniel; Weber, Rob; Messinger, Lisa; Kidwell, JessicaL; Nicoski, Dan;

Jones, Aaryn; Davis, Molly; Shell, Karrie-Jo; Brett Thomas; Danny France; Wellborn, Floyd; Mitchell, Ken; Kemker, Carol; Hall, Renea; Campbell-Dunbar, Shawneille; Smith, Brian

UPDATE #2: Slides to facilitate overview. (These will be used in future meetings with representatives from other federal agencies and ECOS).

UPDATE #1: Materials added (peer review reports).

Hi all,

Please join us for an overview of the peer review comments received on GenX and PFBS and next steps. Materials to be added. We have invited all of the designated regional and program office representatives; please feel free to forward as appropriate within your office.

Thanks,
Samantha

.....

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Help

Appointment

**From:** Strong, Jamie [Strong.Jamie@epa.gov]
**Sent:** 9/7/2018 11:42:46 AM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Hines, Ronald [Hines.Ronald@epa.gov]; Abedini, Jaleh [abedini.jaleh@epa.gov]; Angrish, Michelle [Angrish.Michelle@epa.gov]; Ankley, Gerald [Ankley.Gerald@epa.gov]; Barron, Mace [Barron.Mace@epa.gov]; Biales, Adam [Biales.Adam@epa.gov]; Blackwell, Brett [Blackwell.Brett@epa.gov]; Botteri, Nicole [Botteri.Nicole@epa.gov]; Carleton, Jim [Carleton.Jim@epa.gov]; Carswell, Gleta [Carswell.Gleta@epa.gov]; Cavallin, Jenna [Cavallin.Jenna@epa.gov]; Cheng, Wan-Yun [Cheng.Wan-Yun@epa.gov]; Chorley, Brian [Chorley.Brian@epa.gov]; Collette, Tim [Collette.Tim@epa.gov]; Conley, Justin [Conley.Justin@epa.gov]; Conolly, Rory [Conolly.Rory@epa.gov]; Corton, Chris [Corton.Chris@epa.gov]; Degitz, Sigmund [Degitz.Sigmund@epa.gov]; Doering, Jonathon [doering.jonathon@epa.gov]; Edwards, Stephen [Edwards.Stephen@epa.gov]; Ekman, Drew [Ekman.Drew@epa.gov]; El-Masri, Hisham [El-Masri.Hisham@epa.gov]; Fay, Kellie [Fay.Kellie@epa.gov]; Franzosa, Jill [Franzosa.Jill@epa.gov]; Fry, Meridith [Fry.Meridith@epa.gov]; Ge, Yue [Ge.Yue@epa.gov]; Gessner, Lauren [gessner.lauren@epa.gov]; Gilbert, Mary E. [Gilbert.Mary@epa.gov]; Gray, Earl [Gray.Earl@epa.gov]; Haselman, Jon [Haselman.Jon@epa.gov]; Hassan, Iman [Hassan.Iman@epa.gov]; Hazari, Mehdi [Hazari.Mehdi@epa.gov]; Herr, David [Herr.David@epa.gov]; Hester, Susan [Hester.Susan@epa.gov]; Hill, Thomas [hill.thomas@epa.gov]; Hines, David [hines.david@epa.gov]; Hornung, Michael [Hornung.Michael@epa.gov]; Hubal, Elaine [Hubal.Elaine@epa.gov]; Hughes, MichaelF [Hughes.MichaelF@epa.gov]; Hunter, Sid [Hunter.Sid@epa.gov]; Ives, Cataia [Ives.Cataia@epa.gov]; Jarabek, Annie [Jarabek.Annie@epa.gov]; Jensen, Kathleen [Jensen.Kathleen@epa.gov]; Jeremy Leonard [jaleonar@ncsu.edu]; Joachim Pleil [Pleil@unc.edu]; Judson, Richard [Judson.Richard@epa.gov]; Kahl, Michael [Kahl.Michael@epa.gov]; Kenyon, Elaina [Kenyon.Elaina@epa.gov]; Klinefelter, Gary [Klinefelter.Gary@epa.gov]; Kodavanti, Prasada Rao [Kodavanti.Prasada@epa.gov]; Korte, Joe [Korte.Joe@epa.gov]; Kosian, Pat [Kosian.Pat@epa.gov]; LaLone, Carlie [lalone.carlie@epa.gov]; Laws, Susan [Laws.Susan@epa.gov]; Leonard, Jeremy [Leonard.Jeremy@epa.gov]; Lyons, David [Lyons.David@epa.gov]; Miller, David [Miller.DavidJ@epa.gov]; Miller-Dykeman, Ashley [miller-dykeman.ashley@epa.gov]; Mills, Lesley [Mills.Lesley@epa.gov]; Mills, Marc [mills.marc@epa.gov]; Mortensen, Holly [Mortensen.Holly@epa.gov]; Moser, Ginger [Moser.Ginger@epa.gov]; Nelms, Mark [Nelms.Mark@epa.gov]; Nelson, Gail [Nelson.Gail@epa.gov]; Nelson, Garret [Nelson.Garret@epa.gov]; Olker, Jennifer [olker.jennifer@epa.gov]; OShaughnessy, Katie [OShaughnessy.Katie@epa.gov]; Phillips, Katherine [Phillips.Katherine@epa.gov]; Pittman, Maureen [Pittman.Maureen@epa.gov]; Pleil, Joachim [Pleil.Joachim@epa.gov]; Ramasamy, Santhini [Ramasamy.Santhini@epa.gov]; Scatterday, Allysan [scatterday.allysan@epa.gov]; Schreinemachers, Dina [Schreinemachers.Dina@epa.gov]; Simmons, Jane [Simmons.Jane@epa.gov]; Stoker, Tammy [Stoker.Tammy@epa.gov]; Suarez, Samuel [Suarez.Samuel@epa.gov]; Suen, Alisa [suen.alisa@epa.gov]; Tal, Tamara [Tal.Tamara@epa.gov]; Tan, Cecilia [Tan.Cecilia@epa.gov]; Teng, Quincy [Teng.Quincy@epa.gov]; Thai, Sheau-Fung [Thai.Sheau-Fung@epa.gov]; VanEmon, Jeanette [VanEmon.Jeanette@epa.gov]; Veronesi, Bellina [Veronesi.Bellina@epa.gov]; Wang, Rong-Lin [Wang.Rong-Lin@epa.gov]; Wehmas, Leah [wehmas.leah@epa.gov]; Wilson, Vickie [Wilson.Vickie@epa.gov]; Frithsen, Jeff [Frithsen.Jeff@epa.gov]; Cowden, John [Cowden.John@epa.gov]; Tietge, Joe [Tietge.Joe@epa.gov]

**Subject:** Fw: CSS AOPDD Webinar - Conley - GenX effects in rats
**Location:** dial: 2 **Ex. 6 Personal Privacy (PP)**

**Start:** 9/18/2018 7:00:00 PM
**End:** 9/18/2018 7:45:00 PM
**Show Time As:** Busy

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**From:** Gray, Earl on behalf of Villeneuve, Dan
**Sent:** Thursday, September 6, 2018 7:30 PM

**To:** Strong, Jamie; Hines, Ronald
**Subject:** Fwd: CSS AOPDD Webinar - Conley - GenX effects in rats
**When:** Tuesday, September 18, 2018 3:00 PM-3:45 PM.
**Where:** dial: 202-991-0477; c Ex. 6 Personal Privacy (PP)

FYI.
Earl

Sent from my iPhone

Begin forwarded message:

**From:** "Villeneuve, Dan" <Villeneuve.Dan@epa.gov>
**To:** "Abedini, Jaleh" <abedini.jaleh@epa.gov>, "Angrish, Michelle" <Angrish.Michelle@epa.gov>, "Ankley, Gerald" <Ankley.Gerald@epa.gov>, "Barron, Mace" <Barron.Mace@epa.gov>, "Biales, Adam" <Biales.Adam@epa.gov>, "Blackwell, Brett" <Blackwell.Brett@epa.gov>, "Botteri, Nicole" <Botteri.Nicole@epa.gov>, "Carleton, Jim" <Carleton.Jim@epa.gov>, "Carswell, Gleta" <Carswell.Gleta@epa.gov>, "Cavallin, Jenna" <Cavallin.Jenna@epa.gov>, "Cheng, Wan-Yun" <Cheng.Wan-Yun@epa.gov>, "Chorley, Brian" <Chorley.Brian@epa.gov>, "Collette, Tim" <Collette.Tim@epa.gov>, "Conley, Justin" <Conley.Justin@epa.gov>, "Conolly, Rory" <Conolly.Rory@epa.gov>, "Corton, Chris" <Corton.Chris@epa.gov>, "Degitz, Sigmund" <Degitz.Sigmund@epa.gov>, "Doering, Jonathon" <doering.jonathon@epa.gov>, "Edwards, Stephen" <Edwards.Stephen@epa.gov>, "Ekman, Drew" <Ekman.Drew@epa.gov>, "El-Masri, Hisham" <El-Masri.Hisham@epa.gov>, "Fay, Kellie" <Fay.Kellie@epa.gov>, "Franzosa, Jill" <Franzosa.Jill@epa.gov>, "Fry, Meridith" <Fry.Meridith@epa.gov>, "Ge, Yue" <Ge.Yue@epa.gov>, "Gessner, Lauren" <gessner.lauren@epa.gov>, "Gilbert, Mary E." <Gilbert.Mary@epa.gov>, "Gray, Earl" <Gray.Earl@epa.gov>, "Haselman, Jon" <Haselman.Jon@epa.gov>, "Hassan, Iman" <Hassan.Iman@epa.gov>, "Hazari, Mehdi" <Hazari.Mehdi@epa.gov>, "Herr, David" <Herr.David@epa.gov>, "Hester, Susan" <Hester.Susan@epa.gov>, "Hill, Thomas" <hill.thomas@epa.gov>, "Hines, David" <hines.david@epa.gov>, "Hornung, Michael" <Hornung.Michael@epa.gov>, "Hubal, Elaine" <Hubal.Elaine@epa.gov>, "Hughes, MichaelF" <Hughes.MichaelF@epa.gov>, "Hunter, Sid" <Hunter.Sid@epa.gov>, "Ives, Cataia" <Ives.Cataia@epa.gov>, "Jarabek, Annie" <Jarabek.Annie@epa.gov>, "Jensen, Kathleen" <Jensen.Kathleen@epa.gov>, "Jeremy Leonard" <jaleonar@ncsu.edu>, "Joachim Pleil" <Pleil@unc.edu>, "Judson, Richard" <Judson.Richard@epa.gov>, "Kahl, Michael" <Kahl.Michael@epa.gov>, "Kenyon, Elaina" <Kenyon.Elaina@epa.gov>, "Klinefelter, Gary" <Klinefelter.Gary@epa.gov>, "Kodavanti, Prasada Rao" <Kodavanti.Prasada@epa.gov>, "Korte, Joe" <Korte.Joe@epa.gov>, "Kosian, Pat" <Kosian.Pat@epa.gov>, "LaLone, Carlie" <lalone.carlie@epa.gov>, "Laws, Susan" <Laws.Susan@epa.gov>, "Leonard, Jeremy" <Leonard.Jeremy@epa.gov>, "Lyons, David" <Lyons.David@epa.gov>, "Miller, David" <Miller.DavidJ@epa.gov>, "Miller-Dykeman, Ashley" <miller-dykeman.ashley@epa.gov>, "Mills, Lesley" <Mills.Lesley@epa.gov>, "Mills, Marc" <mills.marc@epa.gov>, "Mortensen, Holly" <Mortensen.Holly@epa.gov>, "Moser, Ginger" <Moser.Ginger@epa.gov>, "Nelms, Mark" <Nelms.Mark@epa.gov>, "Nelson, Gail" <Nelson.Gail@epa.gov>, "Nelson, Garret" <Nelson.Garret@epa.gov>, "Olker, Jennifer" <olker.jennifer@epa.gov>, "OShaughnessy, Katie" <OShaughnessy.Katie@epa.gov>, "Phillips, Katherine" <Phillips.Katherine@epa.gov>, "Pittman, Maureen" <Pittman.Maureen@epa.gov>, "Pleil, Joachim" <Pleil.Joachim@epa.gov>, "Ramasamy, Santhini" <Ramasamy.Santhini@epa.gov>, "Scatterday, Allysan"

<scatterday.allysan@epa.gov>, "Schreinemachers, Dina" <Schreinemachers.Dina@epa.gov>, "Simmons, Jane" <Simmons.Jane@epa.gov>, "Stoker, Tammy" <Stoker.Tammy@epa.gov>, "Suarez, Samuel" <Suarez.Samuel@epa.gov>, "Suen, Alisa" <suen.alisa@epa.gov>, "Tal, Tamara" <Tal.Tamara@epa.gov>, "Tan, Cecilia" <Tan.Cecilia@epa.gov>, "Teng, Quincy" <Teng.Quincy@epa.gov>, "Thai, Sheau-Fung" <Thai.Sheau-Fung@epa.gov>, "VanEmon, Jeanette" <VanEmon.Jeanette@epa.gov>, "Veronesi, Bellina" <Veronesi.Bellina@epa.gov>, "Wang, Rong-Lin" <Wang.Rong-Lin@epa.gov>, "Wehmas, Leah" <wehmas.leah@epa.gov>, "Wilson, Vickie" <Wilson.Vickie@epa.gov>, "Frithsen, Jeff" <Frithsen.Jeff@epa.gov>, "Cowden, John" <Cowden.John@epa.gov>, "Tietge, Joe" <Tietge.Joe@epa.gov>
**Subject: CSS AOPDD Webinar - Conley - GenX effects in rats**

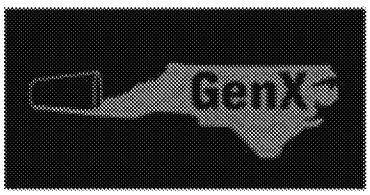
Adverse maternal, fetal, and postnatal effects of oral gestational exposure to hexafluoropropylene oxide dimer acid (GenX) in Sprague-Dawley rats

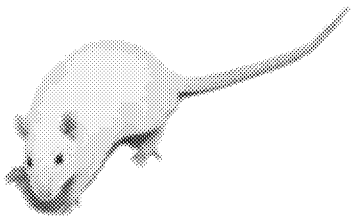
[cid:image003.jpg@01D445FB.13A252E0]
Presenter: Dr. Justin Conley, Ph.D., NHEERL, Toxicity Assessment Division, Research Triangle Park, NC

Tuesday, September 18, 2018
3:00-3:45 PM Eastern (2:00-2:45 Central)

Dial-in: 202-991-0477
Conf ID: 8342470
Adobe Connect URL: https://epawebconferencing.acms.com Ex. 6 Personal Privacy (PP)

If you encounter a busy signal when dialing in, try one of the alternative numbers found here: Ex. 6 Personal Privacy (PP)



Appointment

**From:** Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]
**Sent:** 9/4/2018 12:55:54 PM
**To:** Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Yamada, Richard (Yujiro) [yamada.richard@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Thayer, Kris [thayer.kris@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Breen, Barry [Breen.Barry@epa.gov]; Bodine, Susan [bodine.susan@epa.gov]; Beck, Nancy [Beck.Nancy@epa.gov]; Ross, Mary [Ross.Mary@epa.gov]; Ross, David P [ross.davidp@epa.gov]; Forsgren, Lee [Forsgren.Lee@epa.gov]; McDonough, Owen [mcdonough.owen@epa.gov]; Wildeman, Anna [wildeman.anna@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Bertrand, Charlotte [Bertrand.Charlotte@epa.gov]; Baptist, Erik [Baptist.Erik@epa.gov]; Libelo, Laurence [Libelo.Laurence@epa.gov]
**CC:** Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Foster, Stiven [Foster.Stiven@epa.gov]; Bartlett, Keith [Bartlett.Keith@epa.gov]; Emmerson, Caroline [Emmerson.Caroline@epa.gov]; Kelley, Rosemarie [Kelley.Rosemarie@epa.gov]; Sullivan, Greg [Sullivan.Greg@epa.gov]; Dombrowski, John [Dombrowski.John@epa.gov]; Anderson, Kate [Anderson.Kate@epa.gov]; Mackey, Cyndy [Mackey.Cyndy@epa.gov]; DeLeon, Rafael [Deleon.Rafael@epa.gov]; Hubbard, Carolyn [Hubbard.Carolyn@epa.gov]; Fitz-James, Schatzi [Fitz-James.Schatzi@epa.gov]; Gaines, Linda [Gaines.Linda@epa.gov]; Birchfield, Norman [Birchfield.Norman@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]

**Subject:** GenX and PFBS Toxicity Values and roll-out plan
**Attachments:** Briefing for AAs on GenX Chemicals PFBS Toxicity Assessment combined_FINAL_updated.pdf
**Location:** DCRoomRRB41213/ORD; call-in: **Ex. 6 Personal Privacy (PP)**

**Start:** 9/13/2018 4:00:00 PM
**End:** 9/13/2018 5:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Orme-Zavaleta, Jennifer; Rodan, Bruce; Yamada, Richard (Yujiro); Jones, Samantha; Bahadori, Tina; Lambert, Jason; Owens, Beth; Champlin, Anna; Mattas-Curry, Lahne; Gillespie, Andrew; Thayer, Kris; Grevatt, Peter; Behl, Betsy; Strong, Jamie; Breen, Barry; Bodine, Susan; Beck, Nancy; Ross, Mary; Ross, David P; Forsgren, Lee; McDonough, Owen; Wildeman, Anna; Nagle, Deborah; Jacobs, Brittany; Miller, Gregory; Flaherty, Colleen; Henry, Tala; Burneson, Eric; Holsinger, Hannah; Wadlington, Christina; Drinkard, Andrea; Bertrand, Charlotte; Baptist, Erik; Libelo, Laurence
**Optional Attendees:** Raffaele, Kathleen; Foster, Stiven; Bartlett, Keith; Emmerson, Caroline; Kelley, Rosemarie; Sullivan, Greg; Dombrowski, John; Anderson, Kate; Mackey, Cyndy; DeLeon, Rafael; Hubbard, Carolyn; Fitz-James, Schatzi; Gaines, Linda; Birchfield, Norman; Mclain, Jennifer

Appointment

**From:** Gillespie, Andrew [Gillespie.Andrew@epa.gov]
**Sent:** 10/12/2018 7:57:09 PM
**To:** Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Williams, Antony [Williams.Antony@epa.gov]; Sams, Reeder [Sams.Reeder@epa.gov]; Patlewicz, Grace [Patlewicz.Grace@epa.gov]; Richard, Ann [Richard.Ann@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Frithsen, Jeff [Frithsen.Jeff@epa.gov]; Thomas, Russell [Thomas.Russell@epa.gov]; Flowers, Lynn [Flowers.Lynn@epa.gov]; Hines, Ronald [Hines.Ronald@epa.gov]; Yamada, Richard (Yujiro) [yamada.richard@epa.gov]; Impellitteri, Christopher [Impellitteri.Christopher@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Gilliland, Alice [Gilliland.Alice@epa.gov]; Gwinn, Maureen [gwinn.maureen@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Buckley, Timothy [Buckley.Timothy@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Martin, Lawrence [Martin.Lawrence@epa.gov]; Speth, Thomas [Speth.Thomas@epa.gov]; Mills, Marc [mills.marc@epa.gov]; Fleming, Megan [Fleming.Megan@epa.gov]; Geller, Andrew [Geller.Andrew@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Deener, Kathleen [Deener.Kathleen@epa.gov]; Vette, Alan [Vette.Alan@epa.gov]; Matthews, Lisa [Matthews.Lisa@epa.gov]; Fry, Meridith [Fry.Meridith@epa.gov]; Hiscock, Michael [Hiscock.Michael@epa.gov]; D'Amico, Louis [DAmico.Louis@epa.gov]; Burden, Susan [Burden.Susan@epa.gov]; Maguire, Megan [Maguire.Megan@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Hauchman, Fred [hauchman.fred@epa.gov]; vanDrunick, Suzanne [vanDrunick.Suzanne@epa.gov]; Guiseppi-Elie, Annette [Guiseppi-Elie.Annette@epa.gov]; Sonich-Mullin, Cynthia [Sonich-Mullin.Cynthia@epa.gov]; Thurston, Hale [Thurston.Hale@epa.gov]; McKernan, John [McKernan.John@epa.gov]; Timberlake, Dennis [Timberlake.Dennis@epa.gov]; Acheson, Carolyn [Acheson.Carolyn@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Holdsworth, Thomas [Holdsworth.Thomas@epa.gov]; Gullett, Brian [Gullett.Brian@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Maddaloni, Mark [Maddaloni.Mark@epa.gov]; rogers, rick [rogers.rick@epa.gov]; Allenbach, Becky [Allenbach.Becky@epa.gov]; Harris, Kimberly [harris.kimberly@epa.gov]; Morton, Michael [Morton.Michael@epa.gov]; Shields, Amy [Shields.Amy@epa.gov]; Bahrman, Sarah [Bahrman.Sarah@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Mazza, Carl [Mazza.Carl@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Reinhart, Roger [Reinhart.Roger@epa.gov]; McClain-Vanderpool, Lisa [Mcclain-Vanderpool.Lisa@epa.gov]; Miller, Amy [Miller.Amy@epa.gov]; Dunbar, Bill [dunbar.bill@epa.gov]; Kasparek, Lauren [kasparek.lauren@epa.gov]; Fitz-James, Schatzi [Fitz-James.Schatzi@epa.gov]; Dombrowski, John [Dombrowski.John@epa.gov]; Cooperstein, Sharon [Cooperstein.Sharon@epa.gov]; Vasu, Amy [Vasu.Amy@epa.gov]; Kahn, Lisa [Kahn.Lisa@epa.gov]; Thomas-Burton, Tami [Thomas-Burton.Tami@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Goodwin, Kara [goodwin.kara@epa.gov]; Balasa, Kate [balasa.kate@epa.gov]; Cassidy, Meghan [Cassidy.Meghan@epa.gov]; Small, Matthew [Small.Matthew@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Ellenbogen, Victoria [Ellenbogen.Victoria@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; 'mmaddalo22@gmail.com' [mmaddalo22@gmail.com]; Foster, Stiven [Foster.Stiven@epa.gov]; Murphy, Elizabeth [Murphy.Elizabeth@epa.gov]; Braverman, Carole [braverman.carole@epa.gov]; Scheifele, Hans [Scheifele.Hans@epa.gov]; ORD-OSP-RSL [ORDOSPRSL@epa.gov]; ORD-OSP-STL [ORDOSPSTL@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Greene, Sophie [Greene.Sophie@epa.gov]; Simon, Michelle [Simon.Michelle@epa.gov]; Shuster, William [Shuster.William@epa.gov]; Resek, Elizabeth [Resek.Elizabeth@epa.gov]; Herrmann, Ronald [Herrmann.Ronald@epa.gov]; Voit, Jim [Voit.Jim@epa.gov]; Zintek, Lawrence [zintek.lawrence@epa.gov]; Kleinmaier, Danielle [kleinmaier.danielle@epa.gov]; Bachman, Brenda [bachman.brenda@epa.gov]; Anderson-Carnahan, Linda [Anderson-Carnahan.Linda@epa.gov]; Jankowski, Mark [jankowski.mark@epa.gov]; Maurice, Charles [maurice.charles@epa.gov]; Benner, Tim [Benner.Tim@epa.gov]; Durkee, Stanley [Durkee.Stan@epa.gov]; Cuje, Jace [Cuje.Jace@epa.gov]; Cybulski, Walter [Cybulski.Walter@epa.gov]; Watkins, Stephen [watkins.stephen@epa.gov]; O'Mara, Kate [OMara.Kate@epa.gov]; Roberts, Cindy [Roberts.Cindy@epa.gov]; Shao, Nicole [Shao.Nicole@epa.gov]; Caporale, Cynthia [Caporale.Cynthia@epa.gov]; Carpenter, Angela [Carpenter.Angela@epa.gov]; Hirsh, Steven [Hirsh.Steven@epa.gov]; Metz, Chloe [Metz.Chloe@epa.gov]; Filipowicz, Urszula [Filipowicz.Urszula@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Mohollen, Laura [Mohollen.Laura@epa.gov]; Benson, Bob [Benson.Bob@epa.gov]; Morrison, Kendra [Morrison.Kendra@epa.gov]; Bennett, James [bennett.james@epa.gov]; Konfirst, Matthew [konfirst.matthew@epa.gov]; Goldblum, Deborah [Goldblum.Deborah@epa.gov]; Kloss, Sarah [Kloss.Sarah@epa.gov]; Poeske, Regina [Poeske.Regina@epa.gov]; Ioven, Dawn [Ioven.Dawn@epa.gov]; Rios-Jafolla, Nancy [Rios-Jafolla.Nancy@epa.gov]; Watson, Linda (R3) [Watson.Linda@epa.gov]; Hubbard, Jennifer [Hubbard.Jennifer@epa.gov]; Gehlhaus, Martin [Gehlhaus.Martin@epa.gov]; fred_pinkney@fws.gov; Tuttle, Jeffrey [Tuttle.Jeffrey@epa.gov]; John McCloskey [John_McCloskey@fws.gov]; Kathleen Patnode

[kathleen_patnode@fws.gov]; Matta, Katie [Matta.Katie@epa.gov]; Plank, Kimberly [plank.kimberly@epa.gov]; simeon.hahn@noaa.gov; Taynor, Matthew [Taynor.Matthew@epa.gov]; Pluta, Bruce [Pluta.Bruce@epa.gov]; Schumacher, Kelly [Schumacher.Kelly@epa.gov]; Kidwell, JessicaL [Kidwell.JessicaL@epa.gov]; O'Connor, Daniel [oconnor.daniel@epa.gov]; Stevens, Jim [Stevens.Jim@epa.gov]; Beringer, Mike [Beringer.Michael@epa.gov]; Jacobs, Ann [Jacobs.Ann@epa.gov]; Wooster-Brown, Catherine [Wooster-Brown.Catherine@epa.gov]; Phillips, Todd [Phillips.Todd@epa.gov]; Mindrup, Mary [Mindrup.Mary@epa.gov]; Brune, Doug [Brune.Doug@epa.gov]; Olhasso, Alizabeth [Olhasso.alizabeth@epa.gov]; Richardson, William [Richardson.William@epa.gov]; Crumlish, Karen [Crumlish.Karen@epa.gov]; Barth, Edwin [Barth.Ed@epa.gov]; Pressman, Jonathan [Pressman.Jonathan@epa.gov]; Burkhardt, Jonathan [Burkhardt.Jonathan@epa.gov]; Crone, Brian [Crone.Brian@epa.gov]; Riddick, Eugenia [riddick.eugenia@epa.gov]; Sanan, Toby [Sanan.Toby@epa.gov]; Kleiner, Eric [Kleiner.Eric@epa.gov]; Mash, Heath [Mash.Heath@epa.gov]; Hedrick, Elizabeth [Hedrick.Elizabeth@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Wright, Michael [Wright.Michael@epa.gov]; jordanpc@miamioh.edu; Birchfield, Norman [Birchfield.Norman@epa.gov]; Hodes, Colette [Hodes.Colette@epa.gov]; Cooke, Maryt [Cooke.Maryt@epa.gov]; Hafez, Ahmed [Hafez.Ahmed@epa.gov]; Gaines, Linda [Gaines.Linda@epa.gov]; Libelo, Laurence [Libelo.Laurence@epa.gov]; Carroll, Ann [carroll.ann@epa.gov]; White, Hal [White.Hal@epa.gov]; Taylor, Timothy [Taylor.Timothy@epa.gov]; Barth, Carina [barth.carina@epa.gov]; Ayodele, Ayowale [ayodele.ayowale@epa.gov]; Saintignon, Diana [Saintignon.Diana@epa.gov]; Zirilli, Alysa [Zirilli.Alysa@epa.gov]; McFadden, Angela [McFadden.Angela@epa.gov]; Nelson, Mark [Nelson.Mark@epa.gov]; Pruzinsky, Amanda [Pruzinsky.Amanda@epa.gov]; Adair, Jillian [adair.jillian@epa.gov]; Zolandz, Mark [Zolandz.Mark@epa.gov]; Breznicky, Valerie [Breznicky.Valerie@epa.gov]; Riccio, Roberta [Riccio.Roberta@epa.gov]; Dearden, Jeremy [dearden.jeremy@epa.gov]; Donahue, Lisa [Donahue.Lisa@epa.gov]; Shenk, Kelly [shenk.kelly@epa.gov]; Wisniewski, Patti-Kay [Wisniewski.Patti-Kay@epa.gov]; Copeland, Stephen [Copeland.Stephen@epa.gov]; Gardenier, George [Gardenier.George@epa.gov]; Meadows, Anthony [Meadows.Anthony@epa.gov]; Smith, Brittany [Smith.Brittany@epa.gov]; Szaro, Jan [Szaro.Jan@epa.gov]; Hanf, Alexander K. [hanf.alexander@epa.gov]; Shuart, Ryan [shuart.ryan@epa.gov]; Hubal, Elaine [Hubal.Elaine@epa.gov]; Sullivan, Kate [Sullivan.Kate@epa.gov]; Asque, Gillian [asque.gillian@epa.gov]; Clark, Jacqueline [clark.jacqueline@epa.gov]; Colletti, John [colletti.john@epa.gov]; Davison, Jenny [davison.jenny@epa.gov]; Johnson, Mark [johnson.mark@epa.gov]; Kimble, Jeffrey [kimble.jeffrey@epa.gov]; Mankowski, Matthew [mankowski.matthew@epa.gov]; Manville, Jennifer [manville.jennifer@epa.gov]; Mendez, Thomas [mendez.thomas@epa.gov]; Moore, Tammy [moore.tammy@epa.gov]; Newman, Erin [newman.erin@epa.gov]; Poleck, Thomas [poleck.thomas@epa.gov]; Prendiville, Timothy [prendiville.timothy@epa.gov]; Quadri, Syed [quadri.syed@epa.gov]; Seely, David [seely.david@epa.gov]; Shoven, Heather [shoven.heather@epa.gov]; Suero, Maryann [suero.maryann@epa.gov]; Valberg, Amelia [valberg.amelia@epa.gov]; Williams, Thomas [williams.tom@epa.gov]; Wilson, Jennifer [wilson.jenniferA@epa.gov]; Greenwald, Michael [Greenwald.Michael@epa.gov]; Rizzo, George [Rizzo.George@epa.gov]; Branby, Jill [Branby.Jill@epa.gov]; Rowsey, Kevin [rowsey.kevin@epa.gov]; Weber, Robert [Weber.Robert@epa.gov]; Rachko, Samantha [rachko.samantha@epa.gov]; Chominski, Robert [Chominski.Robert@epa.gov]; damm, thomas [Damm.Thomas@epa.gov]; Duncan, Bruce [Duncan.Bruce@epa.gov]; Atkinson, Cheryl [Atkinson.Cheryl@epa.gov]; Lynch, Kira [lynch.kira@epa.gov]; Taylor, Dawn [Taylor.Dawn@epa.gov]; Holomuzki, Nicholas [holomuzki.nicholas@epa.gov]; Seligman, Andrew [Seligman.Andrew@epa.gov]; Davis, Lauren O. [Davis.LaurenO@epa.gov]; Blanco-Gonzalez, Joel [Blanco-Gonzalez.Joel@epa.gov]; Basile, Alfred [Basile.Alfred@epa.gov]; Elverson, Caitlin [elverson.caitlin@epa.gov]; Markovich, Jonathan [Markovich.Jonathan@epa.gov]; Ryan, Jeff [Ryan.Jeff@epa.gov]; Thompson, Bob [Thompson.Bob@epa.gov]; Scavello, Grant [Scavello.Grant@epa.gov]; Arvanaghi, Heather [Arvanaghi.Heather@epa.gov]; Gleason, Patricia [Gleason.Patricia@epa.gov]; Thurman, James [Thurman.James@epa.gov]; Merrill, Raymond [Merrill.Raymond@epa.gov]; Strum, Madeleine [Strum.Madeleine@epa.gov]; Caparoso, Jennifer [Caparoso.Jennifer@epa.gov]; Huang, Gavin [huang.gavin@epa.gov]; Essoka, Jonathan [ESSOKA.JONATHAN@EPA.GOV]; Blackburn, Lizl [Blackburn.Lizl@epa.gov]; Rivas, Marcus [Rivas.Marcus@epa.gov]; Webb, Laura [Webb.Laura@epa.gov]; StGermain, Margie [StGermain.Margie@epa.gov]; Adkins, Tabatha [Adkins.Tabatha@epa.gov]; Messinger, Lisa [Messinger.Lisa@epa.gov]; Roberts, Bradley [roberts.bradley@epa.gov]; Sperry, Clint [Sperry.Clint@epa.gov]; Deason, Ken [Deason.Ken@epa.gov]; Tapia, Cecilia [Tapia.Cecilia@epa.gov]; Cook, Charles [Cook.Charles@epa.gov]; Barrette, Michael [Barrette.Michael@epa.gov]; Cutt, Diana [Cutt.Diana@epa.gov]; DiMartino, John [DiMartino.John@epa.gov]; Garbarini, Doug [Garbarini.Doug@epa.gov]; Singerman, Joel [Singerman.Joel@epa.gov]; Pocze, Doug [Pocze.Doug@epa.gov]; Mollin, Jessica [Mollin.Jessica@epa.gov]; Zeno, Denise [Zeno.Denise@epa.gov]; Rodriguez, Daniel [Rodriguez.Daniel@epa.gov]; Struble, Carla [Struble.Carla@epa.gov]; Alvey, Robert [Alvey.Robert@epa.gov]; Flynn, Kathryn [Flynn.Kathryn@epa.gov]; Griffiths, Rachel [griffiths.rachel@epa.gov]; Mishkin, Katherine [Mishkin.Katherine@epa.gov]; Scorca, Michael [Scorca.Michael@epa.gov]; Singh, Sharissa [Singh.Sharissa@epa.gov]; Mazziotta, Nicholas [mazziotta.nicholas@epa.gov]; McPherson, Julie

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**Subject**: ORD PFAS Webinar: High Resolution Mass Spectrometry and Non targeted analysis for PFAS - James McCord, ORD/NERL
**Location**: See webinar details, attached

**Start**: 11/7/2018 7:00:00 PM
**End**: 11/7/2018 8:00:00 PM
**Show Time As**: Busy

**Required Attendees**: (unknown property type)

Please forward this to others who might be interested (and if you prefer to be dropped from this and future ORD PFAS invites, please let me know)

**Topic: High Resolution Mass Spectrometry and Non targeted analysis for PFAS - James McCord, ORD/NERL**

Environmental exposure research has long used targeted analysis of chemicals of interest, generally relying on analytical standards and well understood chemical processes. Technical development of non-targeted methods has allowed discovery and characterization of an explosion of unknowns in environmental samples; unknowns which can be described and ultimately linked to human exposure, epidemiology and/or toxicological outcomes. These non-targeted techniques primarily revolve around high resolution mass spectrometry (HRMS) and either screening using chemical databases, or in-depth manual structure determination. Work using this strategy was responsible for the discovery and confirmation of GenX and related PFAS materials in the Cape Fear River, NC and continues to be used in other settings for novel compounds. This presentation will discuss HRMS and non-targeted analysis as a tool for discovery of novel chemicals in environmental samples, and is based on talks previously presented at the American Chemical Society meeting in Boston, MA.

Conference Number(s): Ex. 6 Personal Privacy (PP)

Participant Code: Ex. 6 Personal Privacy (PP)

To join the meeting:

Ex. 6 Personal Privacy (PP)

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Appointment

**From:** Grevatt, Peter [Grevatt.Peter@epa.gov]
**Sent:** 9/6/2018 9:37:45 PM
**To:** Grevatt, Peter [Grevatt.Peter@epa.gov]; patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; wanda.holmes@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; barry.marcel@us.af.mil; resha.m.putzrath.civ@mail.mil; Sandra Howard [Sandra.Howard@HHS.GOV]; Suzanne_Fitzpatrick [Suzanne.Fitzpatrick@fda.hhs.gov]; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; Paul.South@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; michael.devito@nih.gov; Linda Birnbaum [birnbaumls@niehs.nih.gov]; fjh1@cdc.gov; seg3@cdc.gov; eaw0@cdc.gov; iwa6@cdc.gov; oii2@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; Margo_Schwab@omb.eop.gov; Vladik_Dorjets@omb.eop.gov; Danielle_Y_Jones@omb.eop.gov; Jody_M._Barringer@omb.eop.gov; Christopher_D_Gamache@omb.eop.gov; mfocazio@usgs.gov; Terra.irons@va.gov; Beth.moore@em.doe.gov; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Harper, Ashley [harper.ashley@epa.gov]; Drinkard, Andrea [Drinkard.Andrea@epa.gov]; Behrsing, Tracy; Babcock, Amy [babcock.amy@epa.gov]; Aubee, Catherine [Aubee.Catherine@epa.gov]; Henry, Tala [Henry.Tala@epa.gov]; Orme-Zavaleta, Jennifer [Orme-Zavaleta.Jennifer@epa.gov]; Gillespie, Andrew [Gillespie.Andrew@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Moore, Alexa [moore.alexa@epa.gov]; Champlin, Anna [Champlin.Anna@epa.gov]; Rodan, Bruce [rodan.bruce@epa.gov]; Mattas-Curry, Lahne [Mattas-Curry.Lahne@epa.gov]; Raffaele, Kathleen [raffaele.kathleen@epa.gov]; Gervais, Gregory [Gervais.Gregory@epa.gov]; Leonard, Paul [leonard.paul@epa.gov]; Foster, Stiven [Foster.Stiven@epa.gov]; Libelo, Laurence [Libelo.Laurence@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Lehman, Rachel [lehman.rachel@epa.gov]; Murphy, Elizabeth [Murphy.Elizabeth@epa.gov]; Lan, Alexis [lan.alexis@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]
**CC:** Underwood, Patricia CIV (US) [patricia.underwood6.civ@mail.mil]; Thayer, Kris [thayer.kris@epa.gov]; hga0@cdc.gov; cjc3@cdc.gov; masten@niehs.nih.gov

**Subject:** PFAS Toxicity Assessment Discussion-Federal
**Attachments:** PFBS_Public Comment Draft_REDLINE for Federal Agencies_9-10-18.pdf; PUBLIC COMMENT DRAFT Human Health Tox Values for GenX Chemicals_09_10_2018 REDLINE.pdf
**Location:** EPA WJC East 2123 - Call In Number: 4 Ex. 6 Personal Privacy (PP)

**Start:** 9/13/2018 1:00:00 PM
**End:** 9/13/2018 2:30:00 PM
**Show Time As:** Busy

**Required Attendees:** patricia.m.underwood.civ@mail.mil; maria.vargas@navy.mil; wanda.holmes@navy.mil; freeman.holifield.mil@mail.mil; andrew.rak@noblis.org; andrew.rak2.ctr@mail.mil; mark.s.johnson.civ@mail.mil; jennifer.corack@navy.mil; Anita.K.Meyer@usace.army.mil; james.s.smith454.civ@mail.mil; barry.marcel@us.af.mil; resha.m.putzrath.civ@mail.mil; Sandra.Howard@hhs.gov; Suzanne_Fitzpatrick; Jason.Aungst@fda.hhs.gov; Penelope.Rice@fda.hhs.gov; Paul.South@fda.hhs.gov; wic1@cdc.gov; txf5@cdc.gov; pjb7@cdc.gov; Christopher.Weis@nih.gov; miller.aubrey@nih.gov; suzanne.fenton@nih.gov; michael.devito@nih.gov; birnbaumls@niehs.nih.gov; fjh1@cdc.gov; seg3@cdc.gov; eaw0@cdc.gov; iwa6@cdc.gov; oii2@cdc.gov; pxp5@cdc.gov; linda.s.wennerberg@nasa.gov; Margo_Schwab@omb.eop.gov; Vladik_Dorjets@omb.eop.gov; Danielle_Y_Jones@omb.eop.gov; Jody_M._Barringer@omb.eop.gov; Christopher_D_Gamache@omb.eop.gov; mfocazio@usgs.gov; Terra.irons@va.gov; Beth.moore@em.doe.gov; Mclain, Jennifer; Holsinger, Hannah; Wadlington, Christina; Tiago, Joseph; Burneson, Eric; Behl, Betsy; Strong, Jamie; Jacobs, Brittany; Donohue, Joyce; Miller, Gregory; Harper, Ashley; Drinkard, Andrea; Behrsing, Tracy; Babcock, Amy; Aubee, Catherine; Henry, Tala; Orme-Zavaleta, Jennifer; Gillespie, Andrew; Bahadori, Tina; Jones, Samantha; Lambert, Jason; Lavoie, Emma; Owens, Beth; Moore, Alexa; Champlin, Anna; Rodan, Bruce; Mattas-Curry, Lahne; Raffaele, Kathleen; Gervais, Gregory;

Leonard, Paul; Foster, Stiven; Libelo, Laurence; Soares, Barbara; Lehman, Rachel; Murphy, Elizabeth; Lan, Alexis; Albert, Ryan

**Optional Attendees**: Underwood, Patricia CIV (US); Thayer, Kris; hga0@cdc.gov; cjc3@cdc.gov; masten@niehs.nih.gov

Agenda:

1) Brief review of process to date
2) Discussion of text in two draft documents related to impacts on the thyroid
3) Identification and discussion of other topics of primary interest to federal partners
4) Next steps related to messaging and posting of documents for public review and comment

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 2/4/2019 7:05:02 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]
**CC**: Champlin, Anna [Champlin.Anna@epa.gov]

**Subject**: Discuss PFBS and GenX comments
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 2/5/2019 3:00:00 PM
**End**: 2/5/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Bahadori, Tina; Behl, Betsy; Miller, Gregory; Jacobs, Brittany; Owens, Beth; Lambert, Jason; Jones, Samantha
**Optional Attendees**: Champlin, Anna

Call in-

Ex. 6 Personal Privacy (PP)

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Appointment

**From**: Jones, Samantha [Jones.Samantha@epa.gov]
**Sent**: 2/13/2019 4:42:43 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Thayer, Kris [thayer.kris@epa.gov]; Kraft, Andrew [Kraft.Andrew@epa.gov]
**CC**: Behl, Betsy [Behl.Betsy@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]

**Subject**: Systematic Review
**Location**: DCRoomRRB71214-NCEADir for RRB folks (everyone else Skype, unless you want to come to RRB!)

**Start**: 2/14/2019 5:00:00 PM
**End**: 2/14/2019 5:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Jamie Strong; Jacobs, Brittany; Miller, Gregory; Thayer, Kris; Kraft, Andrew
**Optional Attendees**: Behl, Betsy; Bahadori, Tina; Soares, Barbara

Hi all,

This was the earliest time I could fine in everyone's busy schedules for us to briefly get together to talk about scope of the systematic review questions for GenX chemicals. Getting us all on the same page at the beginning will facilitate the next steps.

Betsy and Tina, I have you guys as optional.

Thanks,
Samantha

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Appointment

**From:** Strong, Jamie [Strong.Jamie@epa.gov]
**Sent:** 3/19/2019 6:39:45 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Fenton, Suzanne (NIH/NIEHS) [E] (suzanne.fenton@nih.gov) [suzanne.fenton@nih.gov]; DCRoomWest5231M/DC-CCW-OST [DCRoomWest5231M@epa.gov]
**CC:** Behl, Betsy [Behl.Betsy@epa.gov]; Linda Birnbaum [birnbaumls@niehs.nih.gov]; Ohanian, Edward [Ohanian.Edward@epa.gov]; Elmore, Susan (NIH/NIEHS) [E] [elmore@niehs.nih.gov]; Devito, Michael (NIH/NIEHS) [E] [michael.devito@nih.gov]; Berridge, Brian (NIH/NIEHS) [E] [brian.berridge@nih.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]

**Subject:** Discuss NIEHS research on GenX chemicals
**Location:** DCRoomWest5231M/DC-CCW-OST

**Start:** 4/11/2019 6:00:00 PM
**End:** 4/11/2019 7:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Jacobs, Brittany; Miller, Gregory; Fenton, Suzanne (NIH/NIEHS) [E] (suzanne.fenton@nih.gov); DCRoomWest5231M/DC-CCW-OST
**Optional Attendees:** Behl, Betsy; Linda Birnbaum; Ohanian, Edward; Elmore, Susan (NIH/NIEHS) [E]; Devito, Michael (NIH/NIEHS) [E]; Berridge, Brian (NIH/NIEHS) [E]; Flaherty, Colleen

**Hello everyone we are using the call in** Ex. 6 Personal Privacy (PP)

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**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, March 14, 2019 9:15 AM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** GenX chemicals research

Sue,
Some of my branch attended SOT and got a chance to catch your posters on GenX chemicals. We are very interested in hearing more about your research. I thought it would be a good idea to reach out to you and see if it's possible to schedule some time to hear what you all have done (and are planning to do) related to GenX chemicals. Informal, just my GenX assessment team (Brittany Jacobs and Greg Miller) and your staff working on these studies. We are in the midst of digging through public comments on our assessment and are really interested in hearing more about the repro/dev effects you'll have identified as this is a data gap currently in our assessment (which I hope you saw as part of interagency review). Let me know if you are amenable and we can look for a chunk of time to talk. Hope you are well!

Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
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Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 5/21/2019 3:38:45 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]

**Subject**: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**Location**: DCRoomWest5231L/DC-CCW-OST

**Start**: 5/29/2019 1:00:00 PM
**End**: 5/29/2019 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Lavoie, Emma; Bahadori, Tina; Soares, Barbara

Appointment

**From**: Barr, Jacqui (DHHS) [BarrJ3@michigan.gov]
**Sent**: 9/23/2019 2:50:33 PM
**To**: Barr, Jacqui (DHHS) [BarrJ3@michigan.gov]; Bailey, Jordan (DHHS-Contractor) [BaileyJ17@michigan.gov]; Jennifer Gray [GrayJ@michigan.gov]; mackenzie-taylord@michigan.gov; Mussa, Abiy (DHHS-Contractor) [MussaA@michigan.gov]; Vant Erve, Joost (DHHS-Contractor) [vantErveJ@michigan.gov]; slivers@michigan.gov; Wildfang, Eric (EGLE) [WILDFANGE@michigan.gov]; Harris, Kimberly [harris.kimberly@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**CC**: MDHHS-SouthGrand-Room-1H [MDHHS-SouthGrand-Room-1H@michigan.gov]; Keatley, Andrea (DHHS-Contractor) [KeatleyA1@michigan.gov]; Groetsch, Kory J. (DHHS) [GroetschK@michigan.gov]
**BCC**: MDHHS-DEH-Conference-Line [MDHHS-DEH-Conference-Line@michigan.gov]

**Subject**: Re-evaluation of GenX study discussion
**Location**: MDHHS-DEH-Conference-Line

**Start**: 9/30/2019 6:00:00 PM
**End**: 9/30/2019 7:00:00 PM
**Show Time As**: Busy

**Recurrence**: (none)

Due to technical difficulties, we will be using the conference line below.

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Tentative agenda:

1. Background on re-evaluation of the GenX DuPont study liver pathology slides
    a. Trigger for re-evaluation
    b. Any findings to date? Speculation on impact to US EPA draft toxicity value?
2. Timeline for final or sharable report

Appointment

**From**: Flaherty, Colleen [Flaherty.Colleen@epa.gov]
**Sent**: 8/1/2019 3:26:05 PM
**To**: Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Elmore, Susan (NIH/NIEHS) [E] [elmore@niehs.nih.gov]; Brix, Amy (NIH/NIEHS) [C] [brix@niehs.nih.gov]; Malarkey, David (NIH/NIEHS) [E] [malarkey@niehs.nih.gov]; Sills, Robert (NIH/NIEHS) [E] [sills@niehs.nih.gov]; Berridge, Brian (NIH/NIEHS) [E] [brian.berridge@nih.gov]

**Subject**: GenX Slides studies
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 8/8/2019 3:00:00 PM
**End**: 8/8/2019 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Strong, Jamie; Jacobs, Brittany; Miller, Gregory; Elmore, Susan (NIH/NIEHS) [E]; Brix, Amy (NIH/NIEHS) [C]; Malarkey, David (NIH/NIEHS) [E]; Sills, Robert (NIH/NIEHS) [E]; Berridge, Brian (NIH/NIEHS) [E]

Call-in number:
Conference ID: Ex. 6 Personal Privacy (PP)

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/21/2020 2:10:44 PM
**To**: Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: DCRoomWest5233AA/DC-CCW-OST [DCRoomWest5233AA@epa.gov]

**Subject**: Discuss BMD modeling for the Bevin Blake and Sue Fenton Paper
**Location**: DCRoomWest5233AA/DC-CCW-OST

**Start**: 2/25/2020 4:00:00 PM
**End**: 2/25/2020 4:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Brinkerhoff, Chris; Strong, Jamie

---

**From:** Brinkerhoff, Chris
**Sent:** Thursday, February 20, 2020 6:09 PM
**To:** Miller, Gregory; Jacobs, Brittany
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments:** Blake Gestation Weight Gain % from ED 0.5 to necropsy Table S5 output.xlsx; Gestational Weight Gain - DuPont 18405 1037 F0 females Table S10_analysis.xlsx

Yes. Maybe a time on Tues 25th or Wed 26th? My schedule is wide open these days. Pick a time that works for you.

**Ex. 5 Deliberative Process (DP)**

Chris

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 18, 2020 2:11 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

Just checking in. Should I schedule some time to talk? When would be good for you?

Hope you had a nice long weekend!

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, February 11, 2020 12:38 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Developmental Repro Study attached. The gestational weight gain table is table S10 on page 80 of the PDF. Thanks so much!!

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 11, 2020 7:35 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I ran a few models. I think we can get something useable out of it, but a few questions first.

**Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 05, 2020 7:55 AM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Thanks Chris! Excited to get your input on the paper!

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 04, 2020 5:45 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I'm happy to take a look. At first glance it seems straight forward. Let me take a little time with it otherwise I'll probably forget stuff to collect thoughts and we meet Tuesday.

p.s. Brittany, Ex. 6 Personal Privacy (PP)

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 04, 2020 3:27 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

Attached is the paper we'd like to get your input on. We're specifically interested in your thoughts about whether it might be possible to model the increase in gestation weight gain and/or incidence of placental lesions. It's a two dose plus control study. Brittany put together a quick summary of the important points from the paper (below). When you're ready, lets set up a time to talk. Brittany is back part time Ex. 6 Personal Privacy (PP) and is in the office on Tuesday and Wednesday each week. Think you could be ready to give us your thoughts by next Tuesday (unless you're a speed-reader and want to talk tomorrow)?

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."
    - Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis
        - Generally, these effects exhibited a dose response and got worse over the dosing period
        - Saw these effects after just 10 or 16 days of dosing
        - Sample size was pretty small (N = 5)
    - Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
        - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
    - Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
        - Constellation of lesions exhibited a dose response
        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 3/23/2020 12:15:11 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: talk about what's left to do for GenX
**Location**: Skype Meeting

**Start**: 3/23/2020 1:00:00 PM
**End**: 3/23/2020 1:30:00 PM
**Show Time As**: Tentative

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

---

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Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 3/26/2020 7:14:57 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: touch base on GenX
**Location**: Skype Meeting

**Start**: 3/30/2020 12:00:00 PM
**End**: 3/30/2020 12:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, Gregory; Jacobs, Brittany

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Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/10/2020 7:21:24 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: touch base on GenX
**Location**: Skype Meeting

**Start**: 4/13/2020 11:30:00 AM
**End**: 4/13/2020 12:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

---

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I finished going through 7, looks like 6.3 and 6.4 still need to be finished so I didn't go into them. There are also comments for both of you in other sections in 6.

Appointment

**From**: Strong, Jamie [Strong.Jamie@epa.gov]
**Sent**: 4/15/2020 7:26:04 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: touch base on unresolved comments GenX
**Location**: Skype Meeting

**Start**: 4/16/2020 6:00:00 PM
**End**: 4/16/2020 7:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, Gregory

---

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Appointment

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 2/1/2021 11:35:49 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]

**Subject**: Check-In
**Attachments**: Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 2/3/2021 3:30:00 PM
**End**: 2/3/2021 4:00:00 PM
**Show Time As**: Busy

**Recurrence**: Weekly
every Wednesday from 10:30 AM to 11:00 AM
**Required Attendees**: Miller, Gregory

Hi Greg,

I thought it would be good for us to check-in weekly while I'm acting if that works for you.

Britt

---

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Appointment

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 2/16/2021 11:57:58 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]
**CC**: Cunningham, Kelly [cunningham.kelly@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Czarina C Cooper [Cooper.Czarina@epa.gov]

**Subject**: WA 4-16 and DBPs Check-In
**Attachments**: Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 7/16/2020 3:00:00 PM
**End**: 7/16/2020 4:00:00 PM
**Show Time As**: Busy

**Recurrence**: Weekly
every Thursday from 11:00 AM to 12:00 PM
**Required Attendees**: Jacobs, Brittany; Lindberg, Casey; Soares, Barbara; Miller, GregoryG
**Optional Attendees**: Cunningham, Kelly; Euling, Susan; Czarina C Cooper

Standing Agenda

- SYR4
- Meeting coverage for upcoming week
- Meeting reviews (ADP workgroup, check-in with Betsy, etc)
- PFOA/PFOS items
- DBPs

6/2/21: Adding Kelly as optional and moving SY4R as first agenda item so Greg and Kelly can jump off if needed

2/16/2021: Adding Greg on to this meeting invite so we can coordinate on PFOA/PFOS work and I guess also six year review 4.

Updating meeting title to include DBPs

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 4/26/2021 1:49:01 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; DAnglada, Lesley [DAnglada.Lesley@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Akhter, Shamima [Akhter.Shamima@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]; Ravenscroft, John [Ravenscroft.John@epa.gov]; Young, Melanie [Young.Melanie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Cunningham, Kelly [cunningham.kelly@epa.gov]; Keel, Adrienne [keel.adrienne@epa.gov]

**Subject**: HRAB check in
**Attachments**: Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; HRAB check in; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 4/27/2021 3:30:00 PM
**End**: 4/27/2021 4:00:00 PM
**Show Time As**: Busy

**Recurrence**: Weekly
every Tuesday from 11:30 AM to 12:00 PM
**Required Attendees**: DAnglada, Lesley; Miller, GregoryG; Akhter, Shamima; Donohue, Joyce; Soares, Barbara; Lindberg, Casey; Ravenscroft, John; Young, Melanie; Jacobs, Brittany; Cunningham, Kelly; Keel, Adrienne

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Appointment

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 7/6/2021 2:44:24 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** GenX Check-Ins: Modeling Discussion
**Location:** Microsoft Teams Meeting

**Start:** 7/8/2021 6:00:00 PM
**End:** 7/8/2021 6:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Miller, GregoryG

Hello,

I am scheduling some GenX check-ins for us to discuss issues I identify while responding to the peer review comments and in finalizing the document. Our schedules are pretty packed, so I'll aim for half hour discussions weekly and try to provide materials in advance for discussion. I will add the response to comments doc and assessment I am working off of once my Outlook cooperates.

For this first meeting, I want to discuss a path forward for responding to this peer reviewer's comment:
Selection of Dupont-18405-1037, 2010 for RfD derivation is scientifically justified and clearly described in the current toxicity assessment, as it was in 2018. Confidence in the study is only increased by the NTP PWG's review of liver pathology, as it is essentially confirmatory of the original findings. Also, despite an adverse response (i.e., critical effect) being defined by a constellation of lesions rather than a single one, the resulting PODHED changed very little from 2018 (i.e., it was reduced from 0.023 to 0.01 mg/kg/day). It is also noteworthy that the reduction in PODHED remained minor despite the change from male to female mice as its basis. Though I support the use of Dupont's reproductive/developmental study for RfD derivation, the new definition of adversity raises an issue for dose-response modeling. Based on the slide review worksheets in Appendix E, several mice were diagnosed by the NTP PWG with varying degrees of cytoplasmic alteration only, or in some cases, cytoplasmic alteration accompanied by mixed cell infiltration. In the absence of necrosis or apoptosis, it would seem appropriate to consider these diagnoses as adaptive and non-adverse (as was done in Table 11 where 0.5 mg/kg/day was determined to be a NOAEL in Dupont's 90-day mouse study, despite cytoplasmic alteration in 10/10 males). However, the dose-response data modeled in Appendix F suggest otherwise (e.g., 24/24 female mice in the high-dose group were selected for dose-response modeling, yet animal numbers 5027, 5033 and 5035 were diagnosed with mild cytoplasmic alteration and nothing more). Shouldn't the absence of hepatocellular necrosis or apoptosis disqualify an animal from inclusion in dose-response modeling? Admittedly, as the slide review worksheets do not indicate which animals were in a given dose group, this question may be for naught.

---

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Appointment

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 7/8/2021 7:33:29 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]

**Subject:** Chat about GenX Peer Reviewer Comment
**Location:** Microsoft Teams Meeting

**Start:** 7/9/2021 3:00:00 PM
**End:** 7/9/2021 3:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Miller, GregoryG; Brinkerhoff, Chris

---

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 7/9/2021 7:18:39 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** discuss GenX schedule
**Location:** Microsoft Teams Meeting

**Start:** 7/12/2021 2:00:00 PM
**End:** 7/12/2021 2:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Jacobs, Brittany; Miller, GregoryG

<!--[if lte mso 15 || CheckWebRef]-->

Behl, Betsy has shared a OneDrive for Business file with you. To view it, click the link below.

GenX chemicals tox assessment SCHEDULE 070621 BB sye bbedits.docx

<!--[endif]-->

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 7/2/2021 1:20:08 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject**: GenX discusssion
**Location**: Microsoft Teams Meeting

**Start**: 7/6/2021 4:00:00 PM
**End**: 7/6/2021 4:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Behl, Betsy; Jacobs, Brittany
**Optional Attendees**: Miller, GregoryG

Agenda:

1) OLEM Hazardous substance listing timeline vs. GenX timeline
2) Half life human data – ORD analysis; peer review vs. describe it without using it (use BW3/4)

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Appointment

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 5/13/2021 4:53:47 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject**: Chat about GenX
**Location**: Microsoft Teams Meeting

**Start**: 5/18/2021 3:00:00 PM
**End**: 5/18/2021 3:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, GregoryG

You can just call me too , whichever you prefer

---

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Appointment

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 6/3/2021 2:34:32 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** GenX Assessment Check-In
**Location:** Microsoft Teams Meeting

**Start:** 6/9/2021 3:00:00 PM
**End:** 6/9/2021 4:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Miller, GregoryG

Scheduling this for us to touch base and discuss three issues relating to the GenX assessment. I am hoping to add some materials for discussion later on, but want to get this on the calendar before the time disappears.

- Subchronic to chronic uncertainty factor
  - Rationale of Agency reviewers' support of subchronic to chronic
    - ORD comments
  - Focus in on dissenting peer reviewer comments
- Half life data in workers
  - Did Betsy/Sue make calls to Chemours and ECHA?
  - Comparison of PFBS data and the GenX half life study
- Systematic Review
  - Have we talked to ORD?
  - Plan for revision

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Appointment

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 6/10/2021 3:10:47 AM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** GenX follow-up discussion UFS
**Location:** Microsoft Teams Meeting

**Start:** 6/15/2021 2:00:00 PM
**End:** 6/15/2021 3:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Miller, GregoryG

<!--[if lte mso 15 || CheckWebRef]-->

Jacobs, Brittany has shared a OneDrive for Business file with you. To view it, click the link below.

GenX chemicals_subchronic to chronic UF background info.docx

<!--[endif]-->

Discuss whether we think the UFS should stay at a 10 or be lowered back to a 3. See the attachment for some materials to consider for our discussion.

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 7/9/2021 4:58:48 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject:** genX schedule more thoughts
**Location:** Microsoft Teams Meeting

**Start:** 7/9/2021 5:00:00 PM
**End:** 7/9/2021 5:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Miller, GregoryG; Brittany Jacobs

GenX chemicals tox assessment SCHEDULE 070621 BB sye bbedits.docx

Sharing this document. We can talk more on Monday, but I had some additional thoughts on how to streamline and decisions I cant make

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 7/7/2021 6:48:13 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Weyer, Erica [weyer.erica@epa.gov]

**Subject**: GenX schedule revisit
**Attachments**: GenX chemicals tox assessment SCHEDULE 070621 BB.docx
**Location**: Microsoft Teams Meeting

**Start**: 7/8/2021 1:30:00 PM
**End**: 7/8/2021 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, GregoryG; Weyer, Erica

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Appointment

**From:** Nagle, Deborah [Nagle.Deborah@epa.gov]
**Sent:** 7/12/2021 3:39:32 PM
**To:** Nagle, Deborah [Nagle.Deborah@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Wood, Robert [Wood.Robert@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** Proposed GenX schedule
**Location:** Microsoft Teams Meeting

**Start:** 7/13/2021 12:30:00 PM
**End:** 7/13/2021 1:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Betsy Behl; Robert Wood; Euling, Susan; Jacobs, Brittany; Miller, GregoryG

<!--[if lte mso 15 || CheckWebRef]-->

Snowden, Belinda has shared a OneDrive for Business file with you. To view it, click the link below.

GenX chemicals tox assessment SCHEDULE 071221.docx

<!--[endif]-->

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 7/13/2021 5:11:24 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject**: GenX 1 pager
**Location**: Microsoft Teams Meeting

**Start**: 7/13/2021 6:30:00 PM
**End**: 7/13/2021 7:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, GregoryG

If needed – let's see what we can do via email.

---

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 7/14/2021 5:05:04 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: HRAB one-on-one: Brittany
**Location**: Microsoft Teams Meeting

**Start**: 7/15/2021 1:00:00 PM
**End**: 7/15/2021 1:30:00 PM
**Show Time As**: Busy

**Recurrence**: Weekly
every Thursday from 9:00 AM to 9:30 AM
**Required Attendees**: Jacobs, Brittany; Miller, GregoryG

**Greg, jump on for the 1st agenda item!**

**Agenda:**

1) GenX discussion with Sue Fenton – Greg and Brittany
2) PFOA/S
3) GenX
4) DBP TO (ICF)
5) HA technical directive (TT)
6) Other?

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Appointment

**From:** Euling, Susan [Euling.Susan@epa.gov]
**Sent:** 9/1/2021 1:51:09 PM
**To:** Euling, Susan [Euling.Susan@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject:** GenX discussion
**Location:** Microsoft Teams Meeting

**Start:** 9/1/2021 5:30:00 PM
**End:** 9/1/2021 6:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Behl, Betsy; Miller, GregoryG; Jacobs, Brittany

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Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 7/26/2021 3:46:11 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; aic7@CDC.gov [aic7@cdc.gov]

**Subject**: GenX plans for monitoring by NHANES
**Attachments**: Calafat19.pdf
**Location**: Microsoft Teams Meeting

**Start**: 8/2/2021 3:30:00 PM
**End**: 8/2/2021 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Euling, Susan; Miller, GregoryG; Jacobs, Brittany; aic7@cdc.gov

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 9/1/2021 8:26:55 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]

**Subject**: #3 GenX RTC working mtg
**Location**: Microsoft Teams Meeting

**Start**: 9/7/2021 4:30:00 PM
**End**: 9/7/2021 5:00:00 PM
**Show Time As**: Tentative

**Required Attendees**: Miller, GregoryG; Jacobs, Brittany

Now Betsy has put the HECD mtg at 12-12:30pm...so this has shrunk. We will work fast!

---

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 7/22/2021 7:25:11 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject:** Discuss GenX
**Location:** Microsoft Teams Meeting

**Start:** 7/23/2021 12:30:00 PM
**End:** 7/23/2021 1:00:00 PM
**Show Time As:** Busy

**Required Attendees:** Euling, Susan; Jacobs, Brittany; Miller, GregoryG

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 8/31/2021 4:58:21 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]

**Subject**: Mtg #2: GenX RTC public
**Attachments**: GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020 sye review bb.docx
**Location**: Microsoft Teams Meeting

**Start**: 9/1/2021 7:00:00 PM
**End**: 9/1/2021 8:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Jacobs, Brittany; Miller, GregoryG

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 9/14/2021 7:26:34 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; gaz5@cdc.gov; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; hga0@cdc.gov
**CC**: Buser, Melanie (ATSDR/OAD/OIA) [wyf9@cdc.gov]; Ruiz, Patricia (ATSDR/DTHHS/OD) [doz8@cdc.gov]; Prussia, Andrew James (ATSDR/OAD/OIA) [xby2@cdc.gov]

**Subject**: ATSDR-EPA discussion of EPA's Toxicity Assessment for GenX chemicals
**Attachments**: 091921 EPA Final Toxicity Assessment for GenX chems briefing ATSDR DO NOT DISTRIBUTE.pdf
**Location**: Microsoft Teams Meeting

**Start**: 9/23/2021 1:00:00 PM
**End**: 9/23/2021 2:00:00 PM
**Show Time As**: Busy

**Required Attendees**: gaz5@cdc.gov; Jacobs, Brittany; Miller, GregoryG; Behl, Betsy; Donohue, Joyce; Soares, Barbara; Abadin, Henry (ATSDR/DTHHS/ETB)
**Optional Attendees**: Buser, Melanie (ATSDR/OAD/OIA); Ruiz, Patricia (ATSDR/OAD/OIA); Prussia, Andrew James (ATSDR/OAD/OIA)

This meeting will be an opportunity for ATSDR to provide verbal comments on the pre-publication version of EPA's final toxicity assessment for GenX chemicals.

We look forward to your valuable input.

We request that you please ***DO NOT DISTRIBUTE, CITE, OR QUOTE*** the briefing slides (attached) or the draft document (provided by Betsy).

Thank you.

Susan Euling, Ph.D.
Human Health Risk Assessment Branch/HECD
Office of Science and Technology, Office of Water
U.S. Environmental Protection Agency
(o) 202-566-2717
(awl) 301-587-2165

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 8/31/2021 4:57:57 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: Mtg #1: GenX resolve comments working mtg
**Attachments**: GenX Assessment Resp to Public Comments_Tech Edit_7.27.2020 sye review bb.docx
**Location**: Microsoft Teams Meeting

**Start**: 8/31/2021 7:30:00 PM
**End**: 8/31/2021 8:30:00 PM
**Show Time As**: Busy

**Required Attendees**: Miller, GregoryG; Jacobs, Brittany

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 6/8/2021 4:48:41 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Thayer, Kris [thayer.kris@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Kraft, Andrew [Kraft.Andrew@epa.gov]; Shams, Dahnish [Shams.Dahnish@epa.gov]; Soto, Vicki [Soto.Vicki@epa.gov]

**Subject**: Part 1: GenX SR/study qual eval discussion
**Attachments**: DRAFT GenX Chemicals Toxicity Assessment_2.4.21 CLEAN.docx
**Location**: Microsoft Teams Meeting

**Start**: 6/10/2021 3:30:00 PM
**End**: 6/10/2021 4:00:00 PM
**Show Time As**: Busy

**Required Attendees**: Thayer, Kris; Miller, GregoryG; Jacobs, Brittany
**Optional Attendees**: Kraft, Andrew; Shams, Dahnish; Soto, Vicki

Moving due to folks' availability.

Hi Kris,

We met with Samantha, Andrew, and Dahnish last week to discuss next steps to finalize GenX. Samantha offered your expert assistance on surgically revising the GenX study qual eval description (currently a mix of OPPT and IRIS)…with minimal effort and maximum justification!

The peer review draft is attached – we are revising based on peer review comments now so please do not share.

We really appreciate your assistance.

Thanks,
Sue

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 10/18/2021 4:23:44 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Akhter, Shamima [Akhter.Shamima@epa.gov]; Cunningham, Kelly [cunningham.kelly@epa.gov]; DAnglada, Lesley [DAnglada.Lesley@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Keel, Adrienne [keel.adrienne@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Ravenscroft, John [Ravenscroft.John@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Young, Melanie [Young.Melanie@epa.gov]; Czarina C Cooper [Cooper.Czarina@epa.gov]

**Subject**: HRAB staff meeting
**Attachments**: Untitled Attachment; Canceled: HRAB staff meeting; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 10/26/2021 3:30:00 PM
**End**: 10/26/2021 4:00:00 PM
**Show Time As**: Busy

**Recurrence**: Weekly
Occurs every Tuesday from 11:30 AM to 12:00 PM effective 10/26/2021 until 11/30/2021.
**Required Attendees**: Akhter, Shamima; Cunningham, Kelly; DAnglada, Lesley; Donohue, Joyce; Jacobs, Brittany; Keel, Adrienne; Lindberg, Casey; Miller, GregoryG; Ravenscroft, John; Soares, Barbara; Young, Melanie; Czarina C Cooper

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Appointment

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 4/26/2021 1:49:01 PM
**To**: Euling, Susan [Euling.Susan@epa.gov]; DAnglada, Lesley [DAnglada.Lesley@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Akhter, Shamima [Akhter.Shamima@epa.gov]; Donohue, Joyce [Donohue.Joyce@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]; Ravenscroft, John [Ravenscroft.John@epa.gov]; Young, Melanie [Young.Melanie@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Cunningham, Kelly [cunningham.kelly@epa.gov]; Keel, Adrienne [keel.adrienne@epa.gov]

**Subject**: HRAB check in
**Attachments**: Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 4/27/2021 3:30:00 PM
**End**: 4/27/2021 4:00:00 PM
**Show Time As**: Busy

**Recurrence**: Weekly
Occurs every Tuesday from 11:30 AM to 12:00 PM effective 4/27/2021 until 9/20/2021.
**Required Attendees**: DAnglada, Lesley; Miller, GregoryG; Akhter, Shamima; Donohue, Joyce; Soares, Barbara; Lindberg, Casey; Ravenscroft, John; Young, Melanie; Jacobs, Brittany; Cunningham, Kelly; Keel, Adrienne

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Message

**From**: Williams, Ashlei [Williams.Ashlei@epa.gov]
**Sent**: 8/3/2021 8:23:04 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]
**Subject**: RE: Monthly GenX Meeting

Hi,

I am writing to inform you that Samantha will be out on leave and will not be able to attend this meeting. If there is any pertinent information, please send her an email and she will respond when she returns.

Thank you,
Ashlei

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Thursday, April 22, 2021 10:43 AM
**To:** Behl, Betsy; Jones, Samantha; Miller, GregoryG; Jacobs, Brittany; Lambert, Jason; Owens, Beth; Lavoie, Emma
**Subject:** Monthly GenX Meeting
**When:** Wednesday, August 4, 2021 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

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Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 8/30/2021 6:46:38 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]

**Subject**: Monthly Meeting on PFAS toxicity assessments
**Location**: Microsoft Teams Meeting

**Start**: 9/1/2021 1:00:00 PM
**End**: 9/1/2021 2:00:00 PM
**Show Time As**: Tentative

**Recurrence**: Monthly
the first Wednesday of every 1 month(s) from 9:00 AM to 10:00 AM
**Required Attendees**: Jones, Samantha; Miller, GregoryG; Jacobs, Brittany; Lambert, Jason; Owens, Beth; Lavoie, Emma

Greetings all. Samantha and I discussed morphing this meeting into a forum to discuss cross-AAship information sharing on all the active toxicity assessments. Consistent with tradition, we can start with GenX. If you have a updates on PFBA, PFHxA or other upcoming assessments, we would love to hear about it.

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# Microsoft Teams meeting

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Message

**From**: Euling, Susan [Euling.Susan@epa.gov]
**Sent**: 9/17/2021 12:28:52 AM
**To**: Gloria.Post@dep.nj.gov; Olsen, Marian [Olsen.Marian@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: RE: Region 2 Briefing: EPA Final Toxicity Assessment for GenX Chemicals

Hi Gloria,

Thank you for sharing with other toxicologists in NJ.

Appreciate it.
Sue

---

**From:** Post, Gloria [DEP] <Gloria.Post@dep.nj.gov>
**Sent:** Thursday, September 16, 2021 6:07 PM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** Re: Region 2 Briefing: EPA Final Toxicity Assessment for GenX Chemicals

Sue,

Thanks for the invitation. I forwarded it to other toxicologists in my group.

Best regards,
Gloria

Gloria B. Post, Ph.D., DABT
Research Scientist

Division of Science and Research
New Jersey Department of Environmental Protection
Mail Code 428-01, PO Box 420
Trenton, NJ 08625-0420

Telephone: (609) 292-8497
Fax: (609) 292-7340

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Thursday, September 16, 2021 5:49 PM
**To:** Post, Gloria [DEP] <Gloria.Post@dep.nj.gov>; Olsen, Marian <olsen.marian@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Cc:** Post, Gloria [DEP] <Gloria.Post@dep.nj.gov>
**Subject:** [EXTERNAL] Region 2 Briefing: EPA Final Toxicity Assessment for GenX Chemicals
**When:** Thursday, September 23, 2021 11:00 AM-12:00 PM.
**Where:** Microsoft Teams Meeting

Dear Region 2,

Please join us for a briefing on EPA's final toxicity assessment for GenX Chemicals, highlighting changes in response to public and peer review comments.

Please forward this invitation to your appropriate state and tribal contacts in R2. Please let me know if this meeting date and time needs to be rescheduled.

*Materials will be added prior to the meeting.*

Sue

---

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Message

**From**: Post, Gloria [DEP] [Gloria.Post@dep.nj.gov]
**Sent**: 9/20/2021 10:46:42 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Mingzhu.fang@dep.nj.gov; DAgostino, Daniel [DAgostino.Daniel@epa.gov]; Olsen, Marian [Olsen.Marian@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: Re: update for NJ on EPA final GenX toxicity assessment

Betsy,

Thanks so much for this invitation! We really appreciate your sharing this information with us.

Can you please also send this invitation to Dr. Brian Pachkowski of NJDEP Division of Science & Research? Brian is a toxicologist who working on the NJDEP GenX assessment along with Mingzhu and me. His email address is brian.pachkowski@dep.nj.gov .

I had forwarded the emails about this meeting that I received from EPA last week to him.

Thank you!

Gloria

Gloria B. Post, Ph.D., DABT
Research Scientist

Division of Science and Research
New Jersey Department of Environmental Protection
Mail Code 428-01, PO Box 420
Trenton, NJ 08625-0420

Telephone: (609) 292-8497
Fax: (609) 292-7340

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Monday, September 20, 2021 6:37 PM
**To:** Post, Gloria [DEP] <Gloria.Post@dep.nj.gov>; Fang, Mingzhu [DEP] <Mingzhu.Fang@dep.nj.gov>; DAgostino, Daniel <DAgostino.Daniel@epa.gov>; Olsen, Marian <olsen.marian@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** [EXTERNAL] update for NJ on EPA final GenX toxicity assessment
**When:** Thursday, September 23, 2021 11:00 AM-12:00 PM.
**Where:** Microsoft Teams Meeting

Dear colleagues from New Jersey,
Please join us for a briefing on the final toxicity assessment for GenX Chemicals, highlighting changes in response to public and peer review comments. We are holding this meeting only for states who have developed guidelines for GenX chemicals so that scientists can understand the nature of the changes we made. This outreach is specifically designed for those familiar with the toxicity database for GenX chemicals. The assessment itself is currently embargoed and we anticipate its release this fall. After it is released we plan a series of webinars to share results more broadly.
Please do not forward this meeting invitation further.

Thank you for your interest and we look forward to speaking with you.

Betsy
Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788

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Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 11/1/2021 7:02:18 PM
**To**: Burneson, Eric [Burneson.Eric@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]
**CC**: Albert, Ryan [Albert.Ryan@epa.gov]
**Subject**: RE: Final toxicity value for GenX chemicals (a PFAS chemical): Briefing to ASTSWMO

That is great. Thanks

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

---

**From:** Burneson, Eric <Burneson.Eric@epa.gov>
**Sent:** Monday, November 1, 2021 3:01 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>; Rodgers-Jenkins, Crystal <Rodgers-Jenkins.Crystal@epa.gov>
**Cc:** Albert, Ryan <Albert.Ryan@epa.gov>
**Subject:** RE: Final toxicity value for GenX chemicals (a PFAS chemical): Briefing to ASTSWMO

Betsy: Crystal and I have a conflict when this meeting is occurring so we may need to have Ryan cover this for SRMD. I would also note that ATSWMO is not a stakeholder that is focused on the drinking water regulatory implications but more the CERCLA / RCRA implications so it may be better to include OLEM in this discussion rather than OGWDW.

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Monday, November 1, 2021 2:11 PM
**To:** Behl, Betsy; ScottL@astswmo.org; DaniaR@astswmo.org; Euling, Susan; Jacobs, Brittany; Miller, GregoryG; Rodgers-Jenkins, Crystal; Burneson, Eric
**Subject:** Final toxicity value for GenX chemicals (a PFAS chemical): Briefing to ASTSWMO
**When:** Thursday, November 4, 2021 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

---

# Microsoft Teams meeting

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Message

**From:** Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 6/1/2021 2:34:31 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject:** FW: Human half-life estimate for GenX is now available
**Attachments:** Chemours study of GenX half-life in workers.pdf; GenX halflife scaling attempt 8 13 20.xlsx

I think we need to talk about this. Ex. 5 Deliberative Process (DP)
Ex. 5 Deliberative Process (DP)

Attached my spreadsheet from when Paul Schlosser suggested we attempted this half-life conversion last year. See the note on cell D7. V Ex. 5 Deliberative Process (DP)

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Tuesday, June 1, 2021 9:54 AM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Human half-life estimate for GenX is now available

FYI. not sure if this changes anything. Please feel free to contact Gloria directly is needed.

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

---

**From:** Post, Gloria (DEP) <Gloria.Post@dep.nj.gov>
**Sent:** Monday, May 31, 2021 9:17 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Subject:** Human half-life estimate for GenX is now available

Betsy,

You and your staff may already be aware of this, but I wanted to make sure that you and your staff who are working on the GenX risk assessment are aware that a human half-life estimate for GenX is now available.

ECHA had required that Chemours conduct a human biomonitoring study of GenX at is Dordrecht facility in the Netherlands. See p. 12-15 of this document https://echa.europa.eu/documents/10162/2d98dcf1-b069-18d5-520c-bee047c0d47e

I had communicated with scientists at the Netherlands environmental agency (RIVM) to find out if this study had been completed. It is completed, but Chemours has not made the study report publicly available so RIVM cannot share it with NJDEP.

However, a summary of the study, including a human half-life estimate of 81 hours, is posted on the ECHA website at https://urldefense.com/v3/__https:/echa.europa.eu/nl/registration-dossier/-/registered-dossier/2679/7/11/6__;!!J30X0ZrnC1oQtbA!bInPS1S6QkDVFZnB_eOoBzoLdhtWjLET3V8td60NXVgySbPX6c-cJ07WklH8ZzzaklsvUA$ To find it, you need to go to the dropdown box at the top and select the second study.

I am attaching a PDF of the information that is posted on the website.

Best regards,
Gloria

Ammonium... - Registration Dossier - ECHA

urldefense.com

Gloria B. Post, Ph.D., DABT
Research Scientist

Division of Science and Research
New Jersey Department of Environmental Protection
Mail Code 428-01, PO Box 420
Trenton, NJ 08625-0420

Telephone: (609) 292-8497
Fax: (609) 292-7340

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/12/2021 5:14:29 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: : For the PFAS Action templateFW: ACTION: By 3:00pm Thursday July 8th - Review/Input Requested on Strategic Framework and PFAS Actions
**Attachments**: 07.01.2021_Strategic Framework.docx; PFAS_Council_Questions OW_2021-05-26.docx; 07.01.2021_PFAS Action Template by Office.OWHECD input.docx

Did you know we are publishing Health Advisories for GenX and PFBS Ex. 5 Deliberative Process (DP)

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Monday, July 12, 2021 12:43 PM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Resek, Elizabeth <Resek.Elizabeth@epa.gov>; Gallagher, Kathryn <Gallagher.Kathryn@epa.gov>
**Cc:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>; Elias, Mike <Elias.Mike@epa.gov>
**Subject:** FW: : For the PFAS Action templateFW: ACTION: By 3:00pm Thursday July 8th - Review/Input Requested on Strategic Framework and PFAS Actions

These materials are what I have on the PFAS action template/strategic framework/council questions. The template version reflects the changes and dates we discussed last week.

Sending FYI

---

**From:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Sent:** Monday, July 5, 2021 4:31 PM
**To:** Reed, Khesha <Reed.Khesha@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Scozzafava, MichaelE <Scozzafava.MichaelE@epa.gov>
**Cc:** Wood, Robert <Wood.Robert@epa.gov>; Hisel-Mccoy, Sara <Hisel-McCoy.Sara@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>; Huff, Lisa <Huff.Lisa@epa.gov>
**Subject:** : For the PFAS Action templateFW: ACTION: By 3:00pm Thursday July 8th - Review/Input Requested on Strategic Framework and PFAS Actions

Team –

The Strategic plan contains the goals and objectives needed to complete the "PFAS Action Template" -- please use the cloud version I sent to you if at all possible. We have a very short time frame to fill this out (3:00 pm on TUES, 6 JUL)

Also attached is the first product we produced for the PFAS Council that includes OST actions--- this may be helpful in completing the new template.

We can discuss at the OST staff meeting tomorrow.

-Thanks
Deborah

-

**From:** McLain, Jennifer L. <McLain.Jennifer@epa.gov>
**Sent:** Friday, July 2, 2021 2:37 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Kloss, Christopher <Kloss.Christopher@epa.gov>; Miller, Wynne <Miller.Wynne@epa.gov>
**Cc:** Wirth, Karen <Wirth.Karen@epa.gov>
**Subject:** FW: ACTION: By 3:00pm Thursday July 8th - Review/Input Requested on Strategic Framework and PFAS Actions

Deborah, Chris, & Wynne –

Hopefully I just sent a link to the PFAS Action table that can be forwarded to anyone as we discussed. My staff are out of the office until Tuesday and I will be asking Alex Lan to work across OW to complete the table.

Please send any track changes edits you have to the Framework to Karen Wirth by COB 7/6.

The plan for both of these is to send to Radhika/Janita for approval on 7/7 for submission to Joe on 7/8.

Thanks!
Jennifer

---

**From:** Tiago, Joseph <Tiago.Joseph@epa.gov>
**Sent:** Thursday, July 1, 2021 11:41 AM
**To:** Lucey, John <Lucey.John.D@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>; Messier, Dawn <Messier.Dawn@epa.gov>; Stalcup, Dana <Stalcup.Dana@epa.gov>; Watkins, Tim <Watkins.Tim@epa.gov>; McLain, Jennifer L. <McLain.Jennifer@epa.gov>; Dawson, Jeffrey <Dawson.Jeff@epa.gov>; Henry, Tala <Henry.Tala@epa.gov>; Lewis, Jen <Lewis.Jen@epa.gov>; Banks, Dawn <Banks.Dawn@epa.gov>; Burden, Susan <Burden.Susan@epa.gov>; Nagle, Deborah <Nagle.Deborah@epa.gov>; Mackey, Cyndy <Mackey.Cyndy@epa.gov>; Blevins, John <Blevins.John@epa.gov>; Fong, Tera <Fong.Tera@epa.gov>
**Cc:** Fox, Radhika <Fox.Radhika@epa.gov>; Szaro, Deb <Szaro.Deb@epa.gov>; Garbow, Avi <Garbow.Avi@epa.gov>; Schafer, Zach <Schafer.Zach@epa.gov>
**Subject:** ACTION: By 3:00pm Thursday July 8th - Review/Input Requested on Strategic Framework and PFAS Actions

Good morning,

Thank you for the great discussion during the last Council meeting and the feedback provided on the **strategic framework**. The attached revised document incorporates your feedback and is provided for your review. Please send me your office level comments/edits **NLT 3:00pm Thursday July 8th**.

Also attached is the **PFAS action template** developed to capture the actions for each office that support the objectives of the strategic framework. We ask that you please provide office level input **NLT 3:00pm on Thursday July 8th**. As this is the first crack at compiling the actions, please be assured that we'll have an opportunity to workshop each office's actions as a Council and there will be PLENTY of time for second and third drafts. We may choose 1 or 2 of the actions as sample for the upcoming Administrator briefing.

As a reminder, please check with your AAs or designee prior to submitting your office input to the Council, and let the AA know they will have several chances for review and input. We're asking for their preliminary thinking on actions at this time.

Please let me know if you have any questions or need additional information.

Looking forward to hearing from you.

Regards,

Joe Tiago, Special Project Advisor
EPA/Office of Water
Office: (202) 564-0340 | Mobile: (202) 672-3501

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/23/2021 2:58:19 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: GenX Chemours Half-life scaling attempt
**Attachments**: GenX halflife scaling attempt 7 23 21.xlsx

See attached. We can walk through it before I send to Chris B to double check the calculations. I vote to keep using the

**Ex. 5 Deliberative Process (DP)**

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/20/2020 3:18:19 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: FW: GenX Immuno Questions

---

**From:** Lehmann, David <Lehmann.David@epa.gov>
**Sent:** Monday, April 16, 2018 6:46 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX Immuno Questions

Hello Greg,

I took a look at the materials you provided. My response to your questions is integrated into the questions below (in **RED**). I hope it is helpful to you. Let me know if you need anything else.

Dave

---

**From:** Miller, Gregory
**Sent:** Thursday, April 12, 2018 3:49 PM
**To:** Lehmann, David <Lehmann.David@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX Immuno Questions

David,
Attached you'll find the TDAR assay from Rushing et al. (2016) and our summary of the data submitted by DuPont. After our conversation, I attempted to re-orient our summary text around the serum globulin concentration rather than the Albumin/Globulin ratio. Also attached is a FDA guidance to industry that seems to suggest that a decrease in globulin is an early indicator of immunosuppression (see p5). We would like your opinion on a few items:

1.

2. **Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Thanks for your help!

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 7/30/2021 4:02:45 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Final Assessment and Response to Second Peer Review for your review

Great job!!!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310
miller.gregory@epa.gov

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, July 30, 2021 9:43 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** GenX Final Assessment and Response to Second Peer Review for your review
**Importance:** High

Good Morning,

I'm extremely happy to send you the GenX final assessment and response to the second peer review for your review. I am attaching them as links since there are multiple reviewers. The assessment is in track changes so you can see what has changed since the second peer review. Note we will need a tech edit on these documents and I have call outs to Tetra Tech for the tech edit in comment bubbles.

Highlighted below are the sections where most of the editing was done in the assessment if you want to focus your review:

- Ex. 5 Deliberative Process (DP)

# Ex. 5 Deliberative Process (DP)

Let me know if you have any questions. I look forward to your edits and feedback!

All the best,
Brittany

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/9/2021 5:21:43 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: RE: GenX Final Assessment and Response to Second Peer Review for your review

I went back and looked. I don't think Deborah reviewed the Response to Public Comment doc. It was shared for IntraAgency review in the Spring while you were away. I don't recall getting any comments on it. It was not shared with the External Peer Review.

Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, August 9, 2021 1:09 PM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review

Hi Sue,

The response to public comment was completed and reviewed by Betsy ~ 1 year ago. It also underwent a tech edit, but I can't remember if it was reviewed by Deborah. We had to have the response to public comment completed before we engaged with the OW IO last summer, so it's possible she may have already reviewed it. I just need to review the doc and update it according to changes we made in the assessment. For example, I now have to update our response to the comments about the systematic review since we removed the OPPT systematic review from the doc. Shouldn't take me too long to make the necessary changes. Let me know if you have any questions.

Britt

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Monday, August 9, 2021 12:07 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review

This is fantastic news. Thank you Brittany and Greg for carefully going through the remaining comments. Wow, also good to hear that 80 pages were dropped due to change in SR methods.

Let me take a look and then send on to Colleen to send to Deborah.

Colleen said that Deborah will need to review the public comment responses since it is typical to provide RTC for the public comments as well. This does not need to go to Deborah right away though since she is fine receiving these docs separately. Grouping comments by categories is helpful. Is this something that Tetratech could help with?

Sue

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, August 9, 2021 10:59 AM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>

**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review
**Importance:** High

Good Morning,

Attached are clean and track change versions of the assessment for Deborah's review. Sue, I incorporated your edits outlined below and had Greg look over our interpretation of the NTP definition of adverse. I've addressed Betsy's main concerns:

- Ex. 5 Deliberative Process (DP)

It wa
shave

Let m
help

- Ex. 5 Deliberative Process (DP)

Thanks again for the edits and time spent going through the document. I will move on to the Response to Public Comment Document next. Does this also need to be sent to Deborah?

All the best,
Britt

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Friday, August 6, 2021 5:19 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review

Hi Brittany,

One thing that continues to impress me is the NTP PWG assessment of the liver lesions. It is an impressive effort and it makes the document so strong.

I checked on Sec. 8.8 and had a minor change (made in the SP doc) which was "prepare bottles" to "reconstitute formula." Your and Betsy's edits to that last paragraph look great!

While I was there, I noticed a couple of minor things and made some edits for clarity on the following pages: 45, 46, 49, 53, and 100 ("health-protective" RfD can be misinterpreted and taken out of context so I spelled it out).

**Ex. 5 Deliberative Process (DP)**

I didn't want to make the change in the document because you may have good reasons to keep it as-is. Whatever you decide on the language, please use the same language on p. 45 as well.

If you have any questions about these additional comments, please let me know.

I know that you are also adding in the NHANES data based on Betsy's request to include the biomonitoring information on limitations of those studies (e.g., blood limit of detection etc.).

Thanks,
Sue

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, August 6, 2021 11:41 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review
**Importance:** High

Great! Thanks to you both for your review and helpful edits. I have gone back through and addressed comments. Sue, look at the very last section of the assessment (8.8) for updates to susceptible populations based on our conversation this morning. If you both are satisfied with the responses/edits, I can get the documents cleaned up for Deborah's review. I would like to keep the comment bubbles specific for the Tech Edit so Deborah knows there is still some work to be done to make the documents pretty and doesn't spend time calling out formatting, etc issues. Let me know!

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Thursday, August 5, 2021 7:07 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>

**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Final Assessment and Response to Second Peer Review for your review

One small comment on the response to comments. Awesome. I will give you a call tomorrow to see if you had any questions , otherwise, lets get it to Deborah next week!

Congratulations. It was a pleasure to read the peer reviewer comments after all we went through.

B

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, July 30, 2021 9:43 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Cc:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** GenX Final Assessment and Response to Second Peer Review for your review
**Importance:** High

Good Morning,

I'm extremely happy to send you the GenX final assessment and response to the second peer review for your review. I am attaching them as links since there are multiple reviewers. The assessment is in track changes so you can see what has changed since the second peer review. Note we will need a tech edit on these documents and I have call outs to Tetra Tech for the tech edit in comment bubbles.

Highlighted below are the sections where most of the editing was done in the assessment if you want to focus your review:

**Ex. 5 Deliberative Process (DP)**

Let me know if you have any questions. I look forward to your edits and feedback!

All the best,
Brittany

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/1/2021 4:00:50 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: GenX Immuno Questions

---

**From:** Lehmann, David <Lehmann.David@epa.gov>
**Sent:** Monday, April 16, 2018 6:46 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX Immuno Questions

Hello Greg,

I took a look at the materials you provided. My response to your questions is integrated into the questions below (in **RED**). I hope it is helpful to you. Let me know if you need anything else.

Dave

---

**From:** Miller, Gregory
**Sent:** Thursday, April 12, 2018 3:49 PM
**To:** Lehmann, David <Lehmann.David@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** GenX Immuno Questions

David,
Attached you'll find the TDAR assay from Rushing et al. (2016) and our summary of the data submitted by DuPont. After our conversation, I attempted to re-orient our summary text around the serum globulin concentration rather than the Albumin/Globulin ratio. Also attached is a FDA guidance to industry that seems to suggest that a decrease in globulin is an early indicator of immunosuppression (see p5). We would like your opinion on a few items:

1.

2.

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Thanks for your help!

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/21/2020 7:15:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX
**Attachments**: GenX comments_ALowit.docx

Converted to Word.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, October 21, 2020 2:59 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: GenX

okay here we go again…

---

**From:** Lowit, Anna <Lowit.Anna@epa.gov>
**Sent:** Wednesday, October 21, 2020 2:58 PM
**To:** Bertrand, Charlotte <Bertrand.Charlotte@epa.gov>; Nagle, Deborah <Nagle.Deborah@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Henry, Tala <Henry.Tala@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>
**Cc:** Reed, Kristen <Reed.Kristen@epa.gov>; Aguirre, Janita <Aguirre.Janita@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Fischer, David <Fischer.David@epa.gov>; Messina, Edward <Messina.Edward@epa.gov>; Goodis, Michael <Goodis.Michael@epa.gov>
**Subject:** RE: GenX

Hi everyone

Here are my comments on GenX. Feel free to follow up if you have any questions.

**Ex. 5 Deliberative Process (DP)**

Anna

Senior Science Advisor
Immediate Office
Office of Pesticide Programs
US Environmental Protection Agency
w: +1 703-308-4135
c: +1 703-258-4209

-----Original Appointment-----
**From:** Aguirre, Janita <Bertrand.Charlotte@epa.gov> **On Behalf Of** Bertrand, Charlotte
**Sent:** Thursday, October 15, 2020 3:19 PM
**To:** Bertrand, Charlotte; Nagle, Deborah; Behl, Betsy; Strong, Jamie; Henry, Tala; Stedeford, Todd; Lowit, Anna

**Cc:** Reed, Kristen; Aguirre, Janita; Flaherty, Colleen; Jacobs, Brittany
**Subject:** GenX
**When:** Wednesday, October 21, 2020 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

---

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Ex. 6 Personal Privacy (PP) hington DC (Toll)

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---

Message

**From:** Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 10/21/2021 12:37:43 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]
**BCC:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject:** RE: Need your input: GenX outreach slides
**Attachments:** Final Toxicity Assessment for GenX chems--public outreach 101921.pptx

See file attached. Made most of the edits. Slide 8 was going to have too much text with the additions so I simplified a bit.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, October 21, 2021 8:14 AM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: Need your input: GenX outreach slides

See below. Greg will send the powerpoint that we both reviewed shortly.

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Wednesday, October 20, 2021 8:32 PM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Need your input: GenX outreach slides

Hi Greg and Brittany,

I walked through Betsy's latest version of the "overview" high level briefing (attached) that she has been giving today. There are a couple of places to fill in for the post-release briefings. Could you help?:

1)

2)

Ex. 5 Deliberative Process (DP)

Also could you take a look at Slide 8, which is a text version of the info in the Conceptual Model? My suggestion would be for the slide to have this change:

•

•

Ex. 5 Deliberative Process (DP)

See his line

# Ex. 5 Deliberative Process (DP)

I would appreciate your review.

Thanks,
Sue

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, October 20, 2021 4:54 PM
**To:** Euling, Susan <Euling.Susan@epa.gov>
**Subject:** GenX

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

Message

**From**: Miller, GregoryG [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/25/2021 11:37:12 AM
**To**: Euling, Susan [Euling.Susan@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, GregoryG [Miller.Gregory@epa.gov]
**Subject**: RE: Need your input: GenX outreach slides

Yes. Pull adults from the susceptible group on Slide 8.

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Monday, October 25, 2021 12:50 AM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Need your input: GenX outreach slides

Thanks Greg and Brittany for the changes to slide 8 and the comment about getting the correct link to the docs on slides 10 and 13. Will fix that.

What about I remove "adults" from potentially susceptible groups (slide 8)? I would think so since we have the adults that are pregnant or could be pregnant included. ?

Sue

---

**From:** Miller, GregoryG <Miller.Gregory@epa.gov>
**Sent:** Thursday, October 21, 2021 8:38 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Subject:** RE: Need your input: GenX outreach slides

See file attached. Made most of the edits. Slide 8 was going to have too much text with the additions so I simplified a bit.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, October 21, 2021 8:14 AM
**To:** Euling, Susan <Euling.Susan@epa.gov>; Miller, GregoryG <Miller.Gregory@epa.gov>
**Subject:** RE: Need your input: GenX outreach slides

See below. Greg will send the powerpoint that we both reviewed shortly.

---

**From:** Euling, Susan <Euling.Susan@epa.gov>
**Sent:** Wednesday, October 20, 2021 8:32 PM
**To:** Miller, GregoryG <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Need your input: GenX outreach slides

Hi Greg and Brittany,

I walked through Betsy's latest version of the "overview" high level briefing (attached) that she has been giving today. There are a couple of places to fill in for the post-release briefings. Could you help?:

1)

2) Ex. 5 Deliberative Process (DP)

Also could you take a look at Slide 8, which is a text version of the info in the Conceptual Model? My suggestion would be for the slide to have this change:

Ex. 5 Deliberative Process (DP)

I would appreciate your review.

Thanks,
Sue

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, October 20, 2021 4:54 PM
**To:** Euling, Susan <Euling.Susan@epa.gov>
**Subject:** GenX

Elizabeth (Betsy) Behl, Director Health and Ecological Criteria Division,
Office of Science and Technology, Office of Water, EPA
Office: 202-566-0788
Cell: 202-251-4747

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 5/20/2019 2:25:29 PM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]

***EPA Response:*** Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/29/2020 7:38:35 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: how's it going?
**Attachments**: Table S36 F1 PND21 BW Males_analysis.xlsx

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Thursday, October 29, 2020 3:36 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: how's it going?

the PFOA/PFOS was the regular PK workgroup that I call into when I can, it's interesting stuff. All the PFAS work is going

Ex. 5 Deliberative Process (DP)

For GenX:

- [illegible]
- Ex. 5 Deliberative Process (DP)
- [illegible]

Ex. 5 Deliberative Process (DP)

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, October 29, 2020 2:25 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** RE: how's it going?

Hey,
Just checking in. I heard you were on the PBPK call with Brittany talking PFOA/PFOS the other day. Did you ever get a

Ex. 5 Deliberative Process (DP)

when you get a chance. I'm working tomorrow.

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, October 13, 2020 4:39 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: how's it going?

Yes. happy to help.
My week got totally upended by k I'm going to try to take a quick cut at this maybe tomorrow. Seems like mostly quick stuff and I can put a marker for anything that might take longer to write up.

Chris

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, October 13, 2020 9:37 AM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** RE: how's it going?

Hi Chris,
This is a very timely moment to check in on GenX. We are currently in the midst of responding to some pretty tricky

Ex. 5 Deliberative Process (DP)

Thanks!

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Friday, October 9, 2020 12:36 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** how's it going?

I heard Jamie is stepping off the RAF dose-response harmonization panel due to competing priorities. Hope that doesn't mean you are off the dose-response case studies panel too? Maybe I missed a meeting where you said this?
Also, I hope GenX is going okay. I don't think we've talked about it in a while. Of course if there is anything I can do to help let me know.
Hope you have a good holiday weekend!
Chris

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 8/1/2019 11:49:47 AM
**To:** Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** FW: GenX data combination comment
**Attachments:** Crosswalk for GenX Comment Numbers to Comment Letters 5 29 19.docx

TetraTech's summary of this comment lists "EPA-HQ-OW-2018-0614-0032 American Chemistry Council, Chemical Products and Technology Division, -0037 Green Toxicology LLC" as the originator of the comment.

**From:** Miller, Gregory
**Sent:** Wednesday, May 15, 2019 1:55 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** GenX data combination comment

Let's talk about this later…

**1.1.7 Comment:** A commenter mentioned that EPA bases its toxicity value for the GenX chemicals on liver effects reported in a mouse reproductive/developmental toxicity screening study, despite that a 90-day subchronic study is available (DuPont-18405-1307) which provides additional relevant hepatic measurements (e.g. alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase). The commenter notes that additional consideration as to the relevance of liver hypertrophy to humans should be considered (Hall et al. 2012). The commenter further notes that EPA dismisses the results from the 90-day study because of the smaller sample size without addressing the other significant aspects of the study. The commenter mentioned that the longer exposure time in the 90-day study should improve chances to observe necrosis despite the lower statistical power. In addition, the consistency of the necrosis data with the liver enzyme results provides a more complete picture of what is happening in the liver than the more limited data available from the reproductive/ developmental study used in the assessment. In addition, the commenter notes that the minimal liver necrosis observed in the reproductive/developmental study used in the assessment may suggest an adaptive, non-adverse reaction in mice or a response to other stressors for which no acknowledgement has been made. Based on the liver effects reported in the 90-day study, the lowest observed adverse effect level (LOAEL) is 5.0 mg/kg/day and the no observed adverse effect level (NOAEL) is 0.5 mg/kg/day. The commenter noted that a benchmark dose analysis of the data conducted by the North Carolina Department of Health and Human Services suggests the lower limit of the benchmark dose lower limit ($BMDL_{10}$) of between 0.449 and 0.446 mg/kg/day. The commenter noted that if EPA uses these values as the point of departure, a human equivalent dose (HED) of 0.067 to 0.070 mg/kg/day would be generated compared to 0.023 mg/kg/day presented by EPA.

Another commenter noted that the hepatocellular single cell necrosis dose-response data for male mice for 84 or 85 days and the 90-day male mouse study were carried out at the same dose levels and used the same species, strain and mouse supplier company. Therefore, these two bioassays should be considered of equivalent status, and treated as if they are a single experiment; this would result in an increase in the estimated RfD by a factor of 1.42. In addition, the commenter noted that the overall effect of applying this

factor, using AUC/dose scaling from mouse to monkey and monkey to human, and applying a subchronic to chronic UF of 1, would be to increase the RfD of GenX to 2.5e-3 mg/kg/day. The commenter provided an attached spreadsheet with these updated calculations.

***EPA Response:*** Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/1/2019 11:56:41 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: GenX data combination comment
**Attachments**: Crouch and Green LLC Comment.pdf; Crouch_Green_2019_GenX_Single_cell_necrosis.xlsx

And the Text of the comment is summarized from Crouch and Greene (a.k.a Green Toxicology LLC).

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, August 1, 2019 7:50 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: GenX data combination comment

TetraTech's summary of this comment lists "EPA-HQ-OW-2018-0614-0032 American Chemistry Council, Chemical Products and Technology Division, -0037 Green Toxicology LLC" as the originator of the comment.

---

**From:** Miller, Gregory
**Sent:** Wednesday, May 15, 2019 1:55 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** GenX data combination comment

Let's talk about this later…

**1.1.7 Comment:** A commenter mentioned that EPA bases its toxicity value for the GenX chemicals on liver effects reported in a mouse reproductive/developmental toxicity screening study, despite that a 90-day subchronic study is available (DuPont-18405-1307) which provides additional relevant hepatic measurements (e.g. alanine aminotransferase, alkaline phosphatase, aspartate aminotransferase). The commenter notes that additional consideration as to the relevance of liver hypertrophy to humans should be considered (Hall et al. 2012). The commenter further notes that EPA dismisses the results from the 90-day study because of the smaller sample size without addressing the other significant aspects of the study. The commenter mentioned that the longer exposure time in the 90-day study should improve chances to observe necrosis despite the lower statistical power. In addition, the consistency of the necrosis data with the liver enzyme results provides a more complete picture of what is happening in the liver than the more limited data available from the reproductive/ developmental study used in the assessment. In addition, the commenter notes that the minimal liver necrosis observed in the reproductive/developmental study used in the assessment may suggest an adaptive, non-adverse reaction in mice or a response to other stressors for which no acknowledgement has been made. Based on the liver effects reported in the 90-day study, the lowest observed adverse effect level (LOAEL) is 5.0 mg/kg/day and the no observed adverse effect level (NOAEL) is 0.5 mg/kg/day. The commenter noted that a benchmark dose analysis of the data conducted by the North Carolina Department of Health and Human Services suggests the lower limit of the benchmark dose lower limit ($BMDL_{10}$) of between 0.449 and 0.446 mg/kg/day. The commenter noted that if EPA uses these values as the point of departure, a human

equivalent dose (HED) of 0.067 to 0.070 mg/kg/day would be generated compared to 0.023 mg/kg/day presented by EPA.

Another commenter noted that the hepatocellular single cell necrosis dose-response data for male mice for 84 or 85 days and the 90-day male mouse study were carried out at the same dose levels and used the same species, strain and mouse supplier company. Therefore, these two bioassays should be considered of equivalent status, and treated as if they are a single experiment; this would result in an increase in the estimated RfD by a factor of 1.42. In addition, the commenter noted that the overall effect of applying this factor, using AUC/dose scaling from mouse to monkey and monkey to human, and applying a subchronic to chronic UF of 1, would be to increase the RfD of GenX to 2.5e-3 mg/kg/day. The commenter provided an attached spreadsheet with these updated calculations.

***EPA Response:*** **Ex. 5 Deliberative Process (DP)**

**Ex. 5 Deliberative Process (DP)**

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/5/2020 6:45:04 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Chemicals follow up items

I'm available both days but last time Charlotte didn't want me in the room. So schedule it around Brittany's schedule.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, November 5, 2020 1:40 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: GenX Chemicals follow up items

Yup. So ridiculous. I have an issue though. **Ex. 6 Personal Privacy (PP)** morning. Not sure how long it will take and I am trying to decide whether I will take the 12 and 13th off.

Are you two free either days?

---

**From:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Sent:** Thursday, November 05, 2020 1:27 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** FW: GenX Chemicals follow up items

Which is better for you? 10th or 12th?

---

**From:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Sent:** Thursday, November 5, 2020 1:17 PM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Re: GenX Chemicals follow up items

Thanks Colleen. One of the follow-ups to the bi-weekly was Charlotte wanting to reconvene next week on responses to Anna's comments and our conversation with the Scientist she recommended we talk to. So my question is what date to propose? How about 10 or 12 Nov to give Betsy time to come up to speed.

Deborah

Sent from my iPhone

Deborah G. Nagle
Director, Office of Science and Technology
Mobile: (202) 689-9404
Office: (202) 564-1185

On Nov 5, 2020, at 1:07 PM, Flaherty, Colleen <Flaherty.Colleen@epa.gov> wrote:

Deborah, we wanted to update you on where we are with the follow up items you asked we attend to for GenX.

1. OPP comments from Anna Lowitt
    - We have responses to the comments provided by OPP (see attached). We don't have follow up questions for Anna. Bottom line is that we disagree with her conclusions related to the SC to C and DB UF. *Ultimately, we still recommend that a full Agency review (same group that PFBS team used including all Program Offices and Regions and Regional PFAS coordinators) be initiated to get a full Agency perspective on the application of guidelines and policy in the UF decisions. Perhaps engaging ORD RTP repro/dev experts (like Tammy Stoker) as part of this review would be beneficial.*
        - We reached out to several groups to discuss these issues including: Bevin Blake (author) now at ORD and Sue Fenton at NIEHS; Samantha Jones, Andrew Kraft, and Allen Davis in ORD; Jason Lambert and Beth Owens, ORD PFBS team; and Earl Gray and Justin Connelly in ORD RTP.
2. Outreach to thyroid experts
    - We reached out to ORD scientists Mary Gilbert and Tammy Stoker on Blake paper thyroid assays and results as recommended by Anna Lowitt. Their bottom line was that the assays and lab that did the work are the gold standard for thyroid (LC MS). They also provided feedback/had some questions related to the endpoints but did not flag any fatal flaws of the study. Thyroid is NOT our critical endpoint. We have identified it as an uncertainty given there is some data to support it as a hazard. Additionally, other PFAS elicit thyroid effects.

Please let me know if you have any questions.

Colleen

<GenX comments_OPP OW responses 11 05 2020cf.docx>

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/19/2020 2:17:08 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: FW: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 6/5/2019 1:00:00 PM
**End**: 6/5/2019 2:00:00 PM
**Show Time As**: Tentative

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, February 6, 2019 4:15 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**When:** Occurs every Wednesday effective 6/5/2019 from 9:00 AM to 10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/19/2020 7:19:01 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Conley 2019 write up and thoughts about GenX

Wahoo! Thanks! ☺

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 19, 2020 2:15 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Conley 2019 write up and thoughts about GenX

Hi,

I just finished with the Conley paper. There are sections in 2.3.3 distribution in gestation and lactation, 4.5 repro and developmental and 4.6.2 mechanistic studies. I am a little torn on whether we should separate out the mechanistic section from the repro/developmental writeup. At first I thought we should, but we don't do that for any of the other studies. There is just a lot of mechanistic data in the Conley study. Anyway, see what you think. On to the Blake paper!

Britt

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, February 18, 2020 2:52 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Conley 2019 write up and thoughts about GenX

This looks good. I will send to Barbara.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, February 18, 2020 2:38 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Conley 2019 write up and thoughts about GenX

Hello,

Attached is a TD to get ICF going on summarizing the systematic review work they've done and to summarize some studies for us. Edit as you see fit. I tried to include examples of what we want instead of spending the time writing out all of the specific details. Let me know if you want edits. I've attached the full text articles they will need for the study summaries and the draft GenX chemicals assessment for reference.

Britt

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, February 18, 2020 7:06 AM

**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Conley 2019 write up and thoughts about GenX

Sounds good.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, February 18, 2020 4:05 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Conley 2019 write up and thoughts about GenX

Under WA 3-16, we ask ICF to assist us with conducting systematic reviews on "unregulated and emerging chemicals of concern identified as needed" TD-4 was used to conduct the systematic review for GenX. I think this is just the next step of the systematic review process for that TD. Additionally, we have a general project support task (Task 5) that this could fall under. I could write up a TD for ICF to write up the systematic review work they did under TD-4 and ask them to provide summaries of these studies and any other studies we may identify with the update literature search. Let me know your thoughts.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, February 13, 2020 9:47 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Conley 2019 write up and thoughts about GenX

Okay I need to figure out what WA this would fall under and whether its within scope and a TD to do this.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 12, 2020 5:22 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Conley 2019 write up and thoughts about GenX

Hello,

I think I am finished with the developmental/reproductive write-up for the Conley et al 2019 paper if someone wants to read it over and see if it makes any sense. I still need to work on the mechanistic section for this paper but want to come up with a strategy. There is also serum data in the Conley paper, so that needs to be added to the toxicokinetic section.

Once I get finished with the Conley paper, I think the next thing I'll do is work on summarizing the Blake paper.

There are three more mechanistic papers to be summarized, maybe this is something ICF can do? I've attached the papers to this email. Maybe they can also provide some input on the adversity of gestational weight gain.

I hope everyone has a good long weekend. As a reminder I'm teleworking on Tuesday. I've forwarded my desk phone to my cell, but you can just call my cell too (4 Ex. 6 Personal Privacy (PP)

See you Wednesday!
Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/21/2020 2:45:21 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

**Ex. 5 Deliberative Process (DP)**

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Friday, February 21, 2020 8:54 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Re: Quick snapshot of the Bevin Blake and Sue Fenton Paper

**Ex. 5 Deliberative Process (DP)**

Sent from my iPhone

On Feb 21, 2020, at 7:03 AM, Miller, Gregory <Miller.Gregory@epa.gov> wrote:

I just opened this email. Still need to think about what it means for us. I'll set up time to meet with Chris.

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Thursday, February 20, 2020 6:09 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Yes. Maybe a time on Tues 25th or Wed 26th? My schedule is wide open these days. Pick a time that works for you.

**Ex. 5 Deliberative Process (DP)**

Chris

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 18, 2020 2:11 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,
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Hope you had a nice long weekend!

Greg

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**Sent:** Tuesday, February 11, 2020 12:38 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Developmental Repro Study attached. The gestational weight gain table is table S10 on page 80 of the PDF. Thanks so much!!

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**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

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**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 05, 2020 7:55 AM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Thanks Chris! Excited to get your input on the paper!

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**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

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p.s. Brittany, welcome back t Ex. 6 Personal Privacy (PP)

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**Sent:** Tuesday, February 04, 2020 3:27 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,
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Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."
    - Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis
        - Generally, these effects exhibited a dose response and got worse over the dosing period
        - Saw these effects after just 10 or 16 days of dosing
        - Sample size was pretty small (N = 5)
    - Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
        - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
    - Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
        - Constellation of lesions exhibited a dose response
        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

<Blake Gestation Weight Gain % from ED 0.5 to necropsy Table S5 output.xlsx>
<Gestational Weight Gain - DuPont 18405 1037 F0 females Table S10_analysis.xlsx>

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/21/2020 2:10:47 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: DCRoomWest5233AA/DC-CCW-OST [DCRoomWest5233AA@epa.gov]

**Subject**: Discuss BMD modeling for the Bevin Blake and Sue Fenton Paper
**Location**: DCRoomWest5233AA/DC-CCW-OST

**Start**: 2/25/2020 4:00:00 PM
**End**: 2/25/2020 4:30:00 PM
**Show Time As**: Tentative

**Required Attendees**: Jacobs, Brittany; Brinkerhoff, Chris; Strong, Jamie

---

**From:** Brinkerhoff, Chris
**Sent:** Thursday, February 20, 2020 6:09 PM
**To:** Miller, Gregory; Jacobs, Brittany
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments:** Blake Gestation Weight Gain % from ED 0.5 to necropsy Table S5 output.xlsx; Gestational Weight Gain - DuPont 18405 1037 F0 females Table S10_analysis.xlsx

Yes. Maybe a time on Tues 25th or Wed 26th? My schedule is wide open these days. Pick a time that works for you.

**Ex. 5 Deliberative Process (DP)**

Chris

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 18, 2020 2:11 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

Just checking in. Should I schedule some time to talk? When would be good for you?

Hope you had a nice long weekend!

Greg

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**Sent:** Tuesday, February 11, 2020 12:38 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Developmental Repro Study attached. The gestational weight gain table is table S10 on page 80 of the PDF. Thanks so much!!

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 11, 2020 7:35 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I ran a few models. I think we can get something useable out of it, but a few questions first.

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 05, 2020 7:55 AM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Thanks Chris! Excited to get your input on the paper!

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 04, 2020 5:45 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I'm happy to take a look. At first glance it seems straight forward. Let me take a little time with it otherwise I'll probably forget stuff to collect thoughts and we meet Tuesday.

p.s. Brittany, welcome back from Ex. 6 Personal Privacy (PP)

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**Sent:** Tuesday, February 04, 2020 3:27 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

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- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

Ex. 5 Deliberative Process (DP)

Message

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**Sent**: 2/21/2020 12:03:39 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments**: Blake Gestation Weight Gain % from ED 0.5 to necropsy Table S5 output.xlsx; Gestational Weight Gain - DuPont 18405 1037 F0 females Table S10_analysis.xlsx

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        - Constellation of lesions exhibited a dose response
        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/4/2020 8:26:43 PM
**To**: Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]
**CC**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments**: EHP6233R2_Supplement_CLEAN_01132020_BEB.docx; EHP6233_R3 final without Supp.pdf

Hey Chris,
Attached is the paper we'd like to get your input on. We're specifically interested in your thoughts about whether it might be possible to model the increase in gestation weight gain and/or incidence of placental lesions. It's a two dose plus control study. Brittany put together a quick summary of the important points from the paper (below). When you're ready, lets set up a time to talk. Brittany is back part time from Ex. 6 Personal Privacy (PP) and is in the office on Tuesday and Wednesday each week. Think you could be ready to give us your thoughts by next Tuesday (unless you're a speed-reader and want to talk tomorrow)?

Greg

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."

- Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis
    - Generally, these effects exhibited a dose response and got worse over the dosing period
    - Saw these effects after just 10 or 16 days of dosing
    - Sample size was pretty small (N = 5)
- Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
    - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
- Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
    - Constellation of lesions exhibited a dose response
    - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter

- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/5/2020 8:18:24 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: GenX Section 6

Ok good. I'm off for the day at 3:30 and off tomorrow too. Jamie, you can kick this off tomorrow if you have time and are looking for something to take on. Otherwise I'll get started on it Monday morning.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, March 5, 2020 3:12 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Section 6

I think this makes a lot of sense. Greg and I talked about this section yesterday and I agree that the logic flow seems a little off now. It worked before because there weren't a lot of other effects to consider and we were kinda forced to go with the male liver necrosis. I think a reorg is a good idea. I have some thoughts in orange below. I don't think it'll be a lot of additional writing because we have to rewrite section 6.1 anyway.
BAP looks like:
2.1.1 Identification of Studies and Effects for D-R Analysis
- this is like our Section 5 Summary of Hazard

**Ex. 5 Deliberative Process (DP)**

2.1.2 Methods of analysis
– covers BMD modeling and BW3/4 (we cover this in Sections 6.2 and 6.3)
2.1.3 Derivation of Candidate Values
-includes presentation of UFs and candidate RfD tables
2.1.4 Derivation of organ/system-specific RfDs
- we're not doing this
2.1.5 Selection of Overall RfD

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, March 05, 2020 2:48 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX Section 6

Looping in Britt too

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, March 05, 2020 2:47 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX Section 6

So I read, edited, and reread Section 6 most of the day and I think I've figured out what's bugging me about it. I don't like that we make the determination about the critical study and effect before we present the UFs and candidate RfD tables. So I looked at IRIS BAP to see how it's organized and wanted to run it by you before making any big reorganization. I propose we add a Derivation of Candidate Values section. This would require some reorganization of our existing Sections 6.4, 6.5 and 6.6. What do you think?

BAP looks like:
2.1.1 Identification of Studies and Effects for D-R Analysis
- this is like our Section 5 Summary of Hazard
2.1.2 Methods of analysis
– covers BMD modeling and BW3/4 (we cover this in Sections 6.2 and 6.3)
2.1.3 Derivation of Candidate Values
-includes presentation of UFs and candidate RfD tables
2.1.4 Derivation of organ/system-specific RfDs
- we're not doing this
2.1.5 Selection of Overall RfD

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/4/2020 11:34:59 AM
**To**: Lambert, Jason [Lambert.Jason@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Weekly GenX-PFBS mtg.

Let's cancel. Jamie is home with a Ex. 6 Personal Privacy (PP)

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

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**From:** Lambert, Jason <Lambert.Jason@epa.gov>
**Sent:** Tuesday, March 3, 2020 7:33 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>
**Subject:** Weekly GenX-PFBS mtg.

Good evening to you all. Beth and I were chatting earlier about PFBS; we wondered if there was a need to keep our call tomorrow morning…? We don't have anything new to report.

Jason C. Lambert, PhD, DABT
Senior Science Advisor
Center for Computational Toxicology and Exposure
U.S. Environmental Protection Agency
26 West Martin Luther King Dr.
Cincinnati, OH 45268
(513)-569-7078
lambert.jason@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/18/2020 11:25:43 AM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**CC**: Behl, Betsy [Behl.Betsy@epa.gov]; Snowden, Belinda [snowden.belinda@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

I do not.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, March 18, 2020 7:24 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Snowden, Belinda <snowden.belinda@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Do we need this meeting today?

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, February 06, 2019 4:15 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**When:** Wednesday, March 18, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 3/23/2020 6:48:44 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: week of 03/23/20 status update GenX chemicals

Added one in green

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, March 23, 2020 2:38 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: week of 03/23/20 status update GenX chemicals

Updated the systematic review bullet. Red text are my edits. I can't think of anything else.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, March 23, 2020 2:30 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** week of 03/23/20 status update GenX chemicals

Can you guys look at this and add? I have to bring this up at the biweekly with Deborah tomorrow to try to convince her that other things are taking time away from this effort.

Betsy,
Here is your weekly update on where we are with the revisions of the GenX chemicals assessment. I have added updates in blue to the to do list. Number 5 is where we need to focus our attention but competing priorities (Greg currently has a 125 page perchlorate response to comment to review and Jamie has not been able to devote time to review due to the increase in online meetings, HHENS work).

Our list of to dos continues to grow, it includes the following:

1.
2.
3.
4.
5.
6.
7.

**Ex. 5 Deliberative Process (DP)**

8.

9.

10.

11.

12.

13.

**Ex. 5 Deliberative Process (DP)**

Please let me know if you have any questions.

Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/20/2020 7:48:23 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: take a look at section 6 <eom>
**Attachments**: GenX RfD w BW3_4 & UF _ RfD v4 20 20 Blake only.xlsx

Here's the math if it helps. The main issue is that the a Ex. 5 Deliberative Process (DP) higher.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 20, 2020 3:31 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: take a look at section 6 <eom>

am still struggling with Ex. 5 Deliberative Process (DP)

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, April 20, 2020 3:02 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: take a look at section 6 <eom>

Haha, not in a negative way. I think it reads well, just going to spend a little time to think about your comments and if there is a way to address them.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 20, 2020 3:01 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: take a look at section 6 <eom>

uh oh

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, April 20, 2020 2:53 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: take a look at section 6 <eom>

I've looked, I'm gonna digest it for a little bit

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, April 20, 2020 2:49 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: take a look at section 6 <eom>

6 looks good. I responded to comments in a couple of places.

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 20, 2020 2:09 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** take a look at section 6 <eom>

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/24/2020 3:39:48 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: GenX Updates

That would be fine with me.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Friday, April 24, 2020 11:13 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX Updates

should I start to clean up 6?

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, April 24, 2020 6:33 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** GenX Updates

Good Morning,

I've updated the systematic review sections for the assessment. There are edits to section 3.3, Appendix A and Appendix B.

**Ex. 5 Deliberative Process (DP)**

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/27/2020 2:32:09 PM
**To**: Lindberg, Casey [Lindberg.Casey@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: GenX: help with 2yr chronic Rat Study
**Attachments**: Animal Deaths DuPont 18405-1238 App C gMiller.xlsx

# Ex. 5 Deliberative Process (DP)

Casey,
Were you able to find any explanation (or care to speculate) on how the "Effective Sample Size" and "Cumulative Survival" were calculated in Table 1? I'm also puzzled about what the 0.5 of an animal means.

---

**From:** Lindberg, Casey <Lindberg.Casey@epa.gov>
**Sent:** Thursday, April 23, 2020 4:57 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX: help with 2yr chronic Rat Study

Hi all,

Attached is a spreadsheet with the information you asked for. Let me know if you need me to walk you through it – I left in the calculations on some pages, but the numbers you wanted are highlighted.

My counts do seem to align with what's presented in Table 1.

Let me know if you need anything else!
Thanks,
Casey

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, April 22, 2020 3:32 PM
**To:** Lindberg, Casey <Lindberg.Casey@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX: help with 2yr chronic Rat Study

Hi Casey!
Hope you are hanging in there! We need some more GenX help. In going over the 2yr chronic rat study, we noticed that there are quite a few animal deaths on study that DuPont never quantifies in one place. Can you go through Appendix C "Record of Animal Fate and Disposition" (page 215) of DuPont-18405-1238 VO1.pdf and count the number of animals that fall in to each of the following categories? Please do this for each dose group for each sex. Please also calculate the mean week that the animals died for each category. And lastly, see how your death counts align with the deaths by week presented in Table 1 (on page 61). Thank you!

- Interim necropsy
- Terminal necropsy
- Found dead
- Euthanized *in extremis*

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 4/27/2020 4:21:36 PM
**To:** Lindberg, Casey [Lindberg.Casey@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** RE: GenX: help with 2yr chronic Rat Study

Ok. Thanks Casey. I'm not going to pursue this further unless somebody has a compelling reason otherwise. I think the

**Ex. 5 Deliberative Process (DP)**

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**From:** Lindberg, Casey <Lindberg.Casey@epa.gov>
**Sent:** Monday, April 27, 2020 12:10 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: GenX: help with 2yr chronic Rat Study

**Ex. 5 Deliberative Process (DP)**

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**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, April 27, 2020 11:25 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>
**Subject:** RE: GenX: help with 2yr chronic Rat Study

Was there any mention in the study about the deaths as compared to the historical controls?

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 27, 2020 10:47 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: GenX: help with 2yr chronic Rat Study

You expect some death across all groups in a 2 year study…its close to a mouse's lifespan. That is a lot if those are the actual %.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, April 27, 2020 10:32 AM
**To:** Lindberg, Casey <Lindberg.Casey@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX: help with 2yr chronic Rat Study

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

104 weeks?

Casey,
Were you able to find any explanation (or care to speculate) on how the "Effective Sample Size" and "Cumulative Survival" were calculated in Table 1? I'm also puzzled about what the 0.5 of an animal means.

---

**From:** Lindberg, Casey <Lindberg.Casey@epa.gov>
**Sent:** Thursday, April 23, 2020 4:57 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: GenX: help with 2yr chronic Rat Study

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Thanks,
Casey

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, April 22, 2020 3:32 PM
**To:** Lindberg, Casey <Lindberg.Casey@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX: help with 2yr chronic Rat Study

Hi Casey!
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- Interim necropsy
- Terminal necropsy
- Found dead
- Euthanized *in extremis*

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/29/2020 11:20:05 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: One new Gen-X paper in the NJ search

Yeah. That sounds about right. This is frustrating. At least it's not a result of something we did wrong.

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, September 29, 2020 7:10 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: One new Gen-X paper in the NJ search

**Ex. 5 Deliberative Process (DP)**

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, September 28, 2020 10:04 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: One new Gen-X paper in the NJ search

This one talks about GenX ppar and cites Thompson et al.

**From:** Donohue, Joyce <Donohue.Joyce@epa.gov>
**Sent:** Friday, September 25, 2020 5:31 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** One new Gen-X paper in the NJ search

I have not read all of the abstracts. I may find that some of the epi papers may include Gen-X. Today I just made the lost of papers that I want to review. This was the only one with Gen-X in the title.

Joyce

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 12/14/2020 7:32:01 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: GenX Chemicals Database Uncertainty Factor White Paper

Looks good. I deleted out all UF discussion except for database UF. I also put alternative wording for the Ex. 5 Deliberative Process (DP) a comment.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, December 11, 2020 7:10 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** GenX Chemicals Database Uncertainty Factor White Paper
**Importance:** High

Started deleting things out. Kept in anything describing studies.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/5/2020 6:09:51 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Ok. Save what you've done and stop working. I'll move it to OneDrive now.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, May 5, 2020 2:09 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Nope, I am so frustrated. I need to be able to see the comments and doing online is funky. There are SO many comments in it from Casey and I cant tell whats what.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, May 05, 2020 1:54 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Ok. Last try. The file is currently held on SharePoint in this folder. If you sort when it was modified from newer to older, it should be at the top. Click the file name then Load in Desktop App.

If that doesn't work, I'll put it on my one drive.

**Ex. 6 Personal Privacy (PP)**

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, May 5, 2020 1:44 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

I cant open it in Word which makes dealing with the comments unbearable.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, May 05, 2020 1:16 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Let's try it a different way. It said this link should work for sharing:
Draft GenX Assessment Resp to Public Comments jbs.docx

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, May 5, 2020 1:11 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

I cant open this

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Friday, May 01, 2020 10:58 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

Miller, Gregory shared "Draft GenX Assessment Resp to Public Comments jbs" with you.

This link only works for the direct recipients of this message.

Draft GenX Assessment Resp to Public Comments jbs

Open

Microsoft OneDrive

Microsoft respects your privacy. To learn more, please read our Privacy Statement.
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/11/2020 2:23:56 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: PFBS MW conversions - applicable to GenX?

# Ex. 5 Deliberative Process (DP)

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, June 11, 2020 10:14 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS MW conversions - applicable to GenX?

I don't know about changing…why didn't we do it before? Talk to Joyce? Look at hydrogen cyanide IRIS…they have a bunch of salts? Talk to Jason?

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, June 11, 2020 9:46 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lindberg, Casey <Lindberg.Casey@epa.gov>
**Subject:** PFBS MW conversions - applicable to GenX?

Casey put together this very helpful 1-pager describing the molecular weight conversions used in the PFBS assessment. I added some comments in the margins that show the parallels with GenX. I'm leaning toward adding a similar conversion to GenX unless you all feel differently. I suspect that any analytical methods for GenX in water will detect the free acid, not the salt. But maybe we should verify that.

Greg

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/19/2020 7:19:21 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Blake/Fenton: Materials for review
**Attachments**: Mode of Action_GenX Chemicals Assessment_4.20.20_BEB sef.docx; Database uncertainty factor_4.20.20_BEB sef.docx; Blake et al 2020 Writeup_BEB sef.docx

I moved the Blake/Fenton edits and comments from the "Database UF" and "Blake et al Writeup" docs into our OneDrive draft. The redline edits look acceptable to me, but we'll need to think about a few of the comments.

Earlier today I moved the ORD comments on our UFs section into our draft. So this just leaves the MOA comments to be imported into our draft.

Britt – I'm going to leave the MOA edits from Blake/Fenton and ORD for you to work though. You spent a lot of time with that section and Jason's comments sound like they will take some thought.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, May 7, 2020 7:39 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Materials for review

here you go

---

**From:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Sent:** Wednesday, May 06, 2020 9:39 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Blake, Bevin (NIH/NIEHS) [F] <bevin.blake@nih.gov>
**Subject:** RE: Materials for review

Hi Jamie,

**Ex. 5 Deliberative Process (DP)**

All the best,
Sue

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 20, 2020 7:59 AM

**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** Materials for Bevin/Sue to review

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

# Ex. 5 Deliberative Process (DP)

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 8/17/2020 2:15:48 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** RE: Uncertainty Factor Definitions & Guidance
**Attachments:** DB UF Language in guidance, IRIS, and GenX.docx

I highlighted some pertinent passages in the material. I also added our UFd and UFs justifications. In re-reading UFd

**Ex. 5 Deliberative Process (DP)**

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, August 17, 2020 8:19 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Uncertainty Factor Definitions & Guidance

use this to highlight

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, August 17, 2020 7:07 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Uncertainty Factor Definitions & Guidance

From the IRIS Glossary:

**Uncertainty Factor**

**Definition:** One of several, generally 10-fold, default factors used in operationally deriving the RfD and RfC from experimental data. The factors are intended to account for (1) variation in susceptibility among the members of the human population (i.e., inter-individual or intraspecies variability); (2) uncertainty in extrapolating animal data to humans (i.e., interspecies uncertainty); (3) uncertainty in extrapolating from data obtained in a study with less-than-lifetime exposure (i.e., extrapolating from subchronic to chronic exposure); (4) uncertainty in extrapolating from a LOAEL rather than from a NOAEL; and (5) uncertainty associated with extrapolation when the database is incomplete.

This is the boilerplate language they're putting in all IRIS assessments. It cites the RfD/RfC Guidance:

**Extrapolation: reference values.** An *oral reference dose* or an *inhalation reference concentration* is an estimate of human exposure (including in susceptible populations) likely to be without appreciable risk of adverse health effects over a lifetime (U.S. EPA, 2002b). Reference values generally cover effects other than cancer. They are also appropriate for carcinogens with a nonlinear mode-of-action.

Calculation of reference values involves dividing the point of departure by a set of *uncertainty factors* (each typically 1, 3, or 10, unless there are adequate chemical-specific data) to account for different sources of uncertainty and variability (U.S. EPA, 2002b), (U.S. EPA, 2014b).

Human variation: An uncertainty factor covers susceptible populations and lifestages that may respond at lower levels, unless the data originate from a susceptible study population.

*Animal-to-human extrapolation:* For reference values based on animal results, an uncertainty factor reflects cross-species differences, which may cause humans to respond at lower levels.

*Subchronic-to-chronic exposure:* For chronic reference values based on subchronic studies, an uncertainty factor reflects the likelihood that a lower level over a longer duration may induce a similar response. This factor may not be necessary for reference values of shorter duration.

*Adverse-effect level to no-observed-adverse-effect level:* For reference values based on a lowest-observed-adverse-effect level, an uncertainty factor reflects a level judged to have no observable adverse effects.

*Database* deficiencies*:* If there is concern that future studies may identify a more sensitive effect, target organ, population, or lifestage, a *database uncertainty factor* reflects the nature of the database deficiency.

---

From the RfD/RfC Guidance (cited above as USEPA 2002b)

The Technical Panel recommends limiting the total UF applied for any particular chemical to no more than 3000 and avoiding the derivation of a reference value that involves application of the full 10-fold UF in four or more areas of extrapolation. This maximum of 3000 applies only to the UFs discussed in the following sections and does not include the various adjustment factors that have been discussed previously (Sections 4.4.2. and 4.4.3.). Similar concerns would need to be considered for the less-than-lifetime reference values, taking into account those UFs that are appropriate for each duration reference value.

**Uncertainty/Variability Factor:** One of several, generally 10-fold, default factors used in operationally deriving the RfD and the RfC from experimental data. The factors are intended to account for (1) the variation in sensitivity among the members of the human population (i.e., inter-individual variability); (2) the uncertainty in extrapolating animal data to humans (i.e., interspecies uncertainty); (3) the uncertainty in extrapolating from data obtained in a study with less-than-lifetime exposure to lifetime exposure (i.e., extrapolating from subchronic to chronic exposure); (4) the uncertainty in extrapolating from a LOAEL rather than from a NOAEL; and (5) the uncertainty associated with extrapolation when the database is incomplete.

**4.4.5.5.** ***Database UF***

The database UF is intended to account for the potential for deriving an underprotective RfD/RfC as a result of an incomplete characterization of the chemical's toxicity. In addition to identifying toxicity information that is lacking, review of existing data may also suggest that a lower reference value might result if additional data were available. Consequently, in deciding to apply this factor to account for deficiencies in the available data set and in identifying its

magnitude, the assessor should consider both the data lacking and the data available for particular organ systems as well as life stages.

In many respects, the additional 10-fold factor for infants recommended by the National Research Council (NRC, 1993) and by Schilter et al. (1996) and called for in the 1996 FQPA is similar to the database UF. If the RfD/RfC is based on animal data, a factor of 3 is often applied if either a prenatal toxicity study or a two-generation reproduction study is missing, or a factor of 10 may be applied if both are missing (Dourson et al., 1996). Dourson et al. (1992) examined the use of the database UF by analyzing ratios of NOAELs for chronic dog, rat, and mouse studies and reproductive and developmental toxicity studies in rats. They concluded that reproductive and developmental toxicity studies provide useful information for establishing the lowest NOAEL, and if one or more bioassays are missing, a factor should be used to address this scientific uncertainty in deriving a chronic RfD.

If data from the available toxicology studies raise suspicions of developmental toxicity and signal the need for developmental data on specific organ systems (e.g., detailed nervous system, immune system, carcinogenesis, or endocrine system), then the database factor should take into account whether or not these data are available and used in the assessment and their potential to affect the POD for the particular duration RfD or RfC under development. If the RfD/RfC is based on human data, a similar assessment regarding the completeness of the database is necessary. Information on life stages and organ systems may come from either animal or human studies. If data on specific life stages or organ systems are unavailable or limited data suggest that availability of more extensive data might decrease the POD, this should be taken into account in assigning a database UF. For example, depending on the database and what is known about the chemical, the lack of a two-generation animal reproductive toxicity study might be considered a deficiency even if the reference value is based on human data. In any case, the size of the database factor to be applied will depend on other information in the database and on how much impact the missing data may have on determining the toxicity of a chemical and, consequently, the POD.

#### 4.4.5.6. *Subchronic-to-Chronic-Duration UF*

As indicated earlier, a duration adjustment currently in use is the application of a UF when only a subchronic duration study is available to develop a chronic reference value such as the RfC or the RfD (U.S. EPA, 1994). A default value of 10 for this UF is applied to the NOAEL/LOAEL or BMDL/BMCL from the subchronic study on the assumption that effects from a given compound in a subchronic study occur at a 10-fold higher concentration than in a corresponding (but absent) chronic study. This factor would be applied subsequent to the adjustment of the exposures from intermittent to continuous, as above.

The specific use of a UF applied to a subchronic study in the derivation of a chronic reference value is reasonable. Some work has been published on this aspect of extrapolation (Lewis et al., 1990; Pieters et al., 1998). Guidance for replacement of the default factor of 10 by CSAFs may be forthcoming. It would be appropriate to incorporate such data into applicable assessments. In the current practice, this factor is applied when a chronic reference value is derived from a database in which the critical study is of subchronic duration. No chronic reference value is derived if neither a subchronic nor chronic study is available. The application of a UF to less-than-subchronic studies is not part of the current practice, but further exploration of this issue may be appropriate. For short-term and longer-term reference values, the application of a UF analogous to the subchronic-to-chronic duration UF also needs to be explored, as there may be situations in which data are available and applicable but they are from studies in which the dosing period is considerably shorter than that for the reference value being derived.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/19/2020 11:46:55 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RfD using BMD modeling of Blake

---

**From:** Miller, Gregory
**Sent:** Thursday, August 13, 2020 7:06 AM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Request for GEN X Material

**Ex. 5 Deliberative Process (DP)**

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, August 12, 2020 7:04 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

**Ex. 5 Deliberative Process (DP)**

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, August 12, 2020 6:32 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Request for GEN X Material

Especially the public comments, I think there is more there than they are asking for but I couldn't remember if like EPN included EWG.

**From:** Strong, Jamie
**Sent:** Wednesday, August 12, 2020 6:26 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Request for GEN X Material

I uploaded everything to a folder on Sharepoint except what is highlighted below. Please check my work. We need to talk about the first ask (RfD based on Blake).

---

**From:** Aguirre, Janita <Aguirre.Janita@epa.gov>
**Sent:** Wednesday, August 12, 2020 4:54 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Weyer, Erica <weyer.erica@epa.gov>
**Subject:** Request for GEN X Material

Hi Deborah, Betsy, and Erica,

As a follow-up to today's meeting on GenX, please prepare the following material that Charlotte termed the "care package" during the meeting. I may receive additional asks from Owen, but here's the list from Charlotte and Dave so far. Once you have the package, please send back to me and I'll put it in their reading queues for attention. I think I'd prefer the information to come in one package, but if you need to batch certain items, let's map out a plan.

**A summary of:**

1) the higher RfD using the new study as the endpoint and the uncertainty factors used to come up with that number.

**A comparison of:**

1) other chemicals that have the most conservative 3000 uncertainty factor assumption and the robustness of the studies supporting those other 3000s.

**A copy of:**

1) PWG report to EPA from Dec. 2019
2) Our updated systematic review of the studies
3) The study that is providing the current POD – possibly the Dupont 18405-1037
4) The Dupont Prenatal and Developmental toxicity study in Rats (18405-841)
5) The two new publications on the reproductive/developmental toxicity of GenX chemicals (Conley et al., 2019; Blake et al., 2020)
6) Comments from
    a. Environmental Working Group
    b. Pennsylvania Department of Environmental Protection
    c. Michigan Department of Environmental Quality
    d. Natural Resources Defense Council
    e. Sierra Clubj
    f. ACC
    g. Dr. James Klaunig, Dr. Damian Shea and Tox Strategies LLC (on behalf of Chemours)

Thank you,
Janita

---

**Janita Aguirre – Special Assistant to David Ross and Anna Wildeman**
U.S. Environmental Protection Agency | Office of Water | Office of the Assistant Administrator
Phone: **(202) 566-1149** | Email: aguirre.janita@epa.gov

---

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/19/2020 1:47:34 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 08_13_2020" with you.

# Ex. 5 Deliberative Process (DP)

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, August 19, 2020 9:41 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 08_13_2020" with you.

I think it looks good. One thought, should we ask if the new data justify the change from a 3 to a 10 in the UF question?

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, August 19, 2020 9:35 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Miller, Gregory shared "Charge Questions for GenX chems EPR2 08_13_2020" with you.

I edited both the RfD and the UF questions. I may have gone too far. Betsy wants this so if you both can take a quick look I would appreciate it.

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, August 17, 2020 9:04 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** Miller, Gregory shared "Charge Questions for GenX chems EPR2 08_13_2020" with you.

I made my first attempt at editing. It's ready for you to have a look.

This link only works for the direct recipients of this message.

Charge Questions for GenX chems EPR2 08_13_2020

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/11/2020 12:33:06 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: PFBA revisions - OW "Red Flag" concerns

Awesome! Thanks!

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, August 11, 2020 8:33 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA revisions - OW "Red Flag" concerns

Just added

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, August 11, 2020 8:26 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBA revisions - OW "Red Flag" concerns

Can you go into the PFBA document and what you said in you email in a reply to your comment on page 3-26? Thanks. ☺

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Monday, August 10, 2020 2:44 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: PFBA revisions - OW "Red Flag" concerns

I've gone through the liver MOA re-write and I think it looks good. They incorporate the Hall criteria to further support their argument that the effects observed in the liver are adverse. I think we (GenX chemicals and PFBA) are aligned now in our rationales.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, August 10, 2020 7:21 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBA revisions - OW "Red Flag" concerns

The comment deadline for PFBA is tomorrow. Let me know if you want me to ask for an extension. Brittany, have you had a chance to look at the liver MOA yet? I've been working on the edits/comments to the added BW3/4 text, but I haven't fully asked that they delete the new text. Depending on what Brittany thinks of MOA, perhaps we should request another meeting to discuss Liver and BW3/4?

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Thursday, August 6, 2020 8:09 AM

**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBA revisions - OW "Red Flag" concerns

Yes this is problematic. We need to offer an alternative though. Not sure what that is...happy to talk. I can respond to Andrew directly.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, August 06, 2020 7:48 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: PFBA revisions - OW "Red Flag" concerns

**Ex. 5 Deliberative Process (DP)**

Here's a link to the doc. I posted it on sharepoint. The liver MOA changes need reviewing too.

**Ex. 5 Deliberative Process (DP)**

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**From:** Davis, Allen <Davis.Allen@epa.gov>
**Sent:** Wednesday, August 5, 2020 11:25 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Kraft, Andrew <Kraft.Andrew@epa.gov>; Soto, Vicki <Soto.Vicki@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Taylor, MicheleM <taylor.michelem@epa.gov>; Schlosser, Paul <Schlosser.Paul@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>
**Subject:** PFBA revisions - OW "Red Flag" concerns

Greg, the PFBA draft assessment that has been revised according to the two "red flag" issues OW raised is

**Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

Also, just to remind you, AR comments are due August 11th.

Please let me know if you have any questions.

J. Allen Davis, MSPH
Biologist
Center for Public Health and Environmental Assessment
U.S. Environmental Protection Agency
Office Phone: 513-569-7024
AWL Phone: 615-730-6693
Cell: 205-422-0655
email: davis.allen@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 8/12/2020 7:52:49 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: PFBS changes

Sounds good. I'm kind of exhausted on this topic. We need to be careful that we don't inadvertently sick anybody on PFBS.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, August 12, 2020 3:51 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS changes

We do need to tell Betsy this, but lets just stop for today ☺

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, August 12, 2020 3:50 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS changes

**Ex. 5 Deliberative Process (DP)**

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**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, August 12, 2020 3:47 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS changes

So their RfD went down too then. By two orders of magnitude right?

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, August 12, 2020 3:34 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBS changes

Here is the new table corrected for the PFBS public comment draft. I'm going to stop now. Their RfDs went down because of a changed BMR and interspecies scaling method.

GenX RfDs dropped by an order of magnitude between the public commend draft and revised final draft. This was due to our change in critical effect (resulting from NTP's review) and UFs and UFd. The GenX chronic RfD went from $8x10^{-5}$ to $3x10^{-6}$ mg/kg/day. Subchronic RfD went from $2x10^{-4}$ to $3x10^{-5}$ mg/kg/day.

**Reference Doses (RfD) for PFBS**

| | Public Comment Draft | Revised Final Draft |
|---|---|---|

| | | |
|---|---|---|
| **Critical Study** | Feng et al., 2017 | Feng et al., 2017 |
| **Critical Effect** | Decreased total serum T4 in newborn (PND1) mice | decreased serum total T4 in newborn (PND 1) mice |
| **Dosing Duration** | Developmental window | Developmental window |
| **$POD_{HED}$** | 4.2 mg/kg/day (BMDL20) | 0.16 mg/kg/day (BMDL0.5SD) |
| **$UF_L$** | 1 | 1 |
| **$UF_S$** | 1 | 1 |
| **$UF_A$** | 3 | 3 |
| **$UF_H$** | 10 | 10 |
| **$UF_D$** | 10 (3 for subchronic RfD) | 10 (3 for subchronic RfD) |
| **$UF_{TOTAL}$** | 300 (100 for subchronic RfD) | 300 (100 for subchronic RfD) |
| **RfD** | Subchronic = $4 \times 10^{-2}$ mg/kg-day K+PFBS<br>Subchronic = $4 \times 10^{-2}$ mg/kg-day free acid<br>Chronic = $1 \times 10^{-2}$ mg/kg-day mg/kg-day (both) | Subchronic = $2 \times 10^{-3}$ mg/kg-day K+PFBS<br>Subchronic = $1 \times 10^{-3}$ mg/kg-day free acid<br>Chronic = $5 \times 10^{-4}$ mg/kg-day (both) |

- *$POD_{HED}$ = Point of Departure Human Equivalent Dose; $UF_L$ = a LOAEL to NOAEL extrapolation uncertainty factor; $UF_S$ = subchronic to a chronic exposure duration uncertainty factor; $UF_A$ = interspecies uncertainty factor; $UF_H$ = intraspecies uncertainty factor; $UF_D$ = database uncertainty factor.

**Reference Doses (RfD) for GenX Chemicals**

| | **Public Comment Draft** | **Revised Final Draft** |
|---|---|---|
| **Critical Study** | Oral reproductive and developmental toxicity study *(Dupont 18405-1037, 2010)* | Oral reproductive and developmental toxicity study *(Dupont 18405-1037, 2010)* |
| **Critical Effect** | Single cell necrosis in **parental males** | Constellation of liver lesions (defined by the NTP PWG to include cytoplasmic alteration, hepatocellular single cell and focal necrosis, and hepatocellular apoptosis) in **parental females** |
| **Dosing Duration** | 84 - 85 days | 53 – 64 days (depending on timing of conception) |
| **$POD_{HED}$** | 0.023 mg/kg/day | 0.01 mg/kg/day |
| **$UF_L$** | 1 | 1 |
| **$UF_S$** | 3 (1 for subchronic RfD) | 10 (1 for subchronic RfD) |
| **$UF_A$** | 3 | 3 |
| **$UF_H$** | 10 | 10 |
| **$UF_D$** | 3 | 10 |
| **$UF_{TOTAL}$** | 300 (100 for subchronic RfD) | 3000 (300 for subchronic RfD) |
| **RfD** | Subchronic = $2 \times 10^{-4}$ mg/kg/day<br>Chronic = $8 \times 10^{-5}$ mg/kg/day | Subchronic = $3 \times 10^{-5}$ mg/kg/day<br>Chronic = $3 \times 10^{-6}$ mg/kg/day |

- *$POD_{HED}$ = Point of Departure Human Equivalent Dose; $UF_L$ = a LOAEL to NOAEL extrapolation uncertainty factor; $UF_S$ = subchronic to a chronic exposure duration uncertainty factor; $UF_A$ = interspecies uncertainty factor; $UF_H$ = intraspecies uncertainty factor; $UF_D$ = database uncertainty factor.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/14/2020 3:35:26 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: PFBA DB UF
**Attachments**: FINAL PFBA_ToxReview_AgencyReview_June2020_OW_8 11 20 revisions.docx

Here is the draft and our comments from August. See page 5-11 for the uncertainty factors.

**Ex. 5 Deliberative Process (DP)**

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:29 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: PFBA DB UF

OMG!!! Did we see this assessment???

**From:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Sent:** Monday, September 14, 2020 11:26 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA DB UF

**Ex. 5 Deliberative Process (DP)**

Allen Davis should also be on the call.

-Andrew

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:12 AM
**To:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA DB UF

# Ex. 5 Deliberative Process (DP)

A call would be good and Greg should be there.

**From:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Sent:** Monday, September 14, 2020 11:09 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA DB UF

Sure thing, Jamie, let's touch base. It will be good to make sure we're on the same page (note: we don't currently mention GenX, as we're pulling from only the PFBS, PFHxA, and PFHxS databases).

# Ex. 5 Deliberative Process (DP)

Did you revise the UFD conclusion for GenX?

And, sorry Greg, I did not receive your voicemail.

-Andrew

Andrew Kraft, PhD | Senior Science Advisor
Chemical and Pollutant Assessment Division | Center for Public Health and Environmental Assessment | U.S. EPA
1200 Pennsylvania Avenue, N.W. | Mail Code 8623R | Washington, DC 20460
Cell: (202)734-1420

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:02 AM
**To:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** PFBA DB UF
**Importance:** High

Andrew,

I wanted to touch base with you on the PFBA assessment, specifically the DB UF. I know Greg left you a VM, but I wanted to follow up. We are currently in discussions with our upper management on our rationale for our DB UF for GenX. There are some statements in PFBA that generalize about short chain PFAS and repro dev effects. It would be helpful if we could touch base on this, we are concerned that the generalizations may impact GenX.

Thanks,
Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | ✉ strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/14/2020 3:51:05 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: PFBA DB UF

**Ex. 5 Deliberative Process (DP)**

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:37 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBA DB UF

so they don't present a 3 and 10. I don't have bandwidth to dig in here right now…budget stuff is through Wednesday.

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Monday, September 14, 2020 11:35 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: PFBA DB UF

Here is the draft and our comments from August. See page 5-11 for the uncertainty factors.

**Ex. 5 Deliberative Process (DP)**

Ex. 5 Deliberative Process (DP)

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:29 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: PFBA DB UF

OMG!!! Did we see this assessment???

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**Sent:** Monday, September 14, 2020 11:26 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA DB UF

Ex. 5 Deliberative Process (DP)

Allen Davis should also be on the call.

-Andrew

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:12 AM
**To:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA DB UF

Ex. 5 Deliberative Process (DP)

A call would be good and Greg should be there.

**From:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Sent:** Monday, September 14, 2020 11:09 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: PFBA DB UF

Sure thing, Jamie, let's touch base. It will be good to make sure we're on the same page (note: we don't currently mention GenX, as we're pulling from only the PFBS, PFHxA, and PFHxS databases).

**Ex. 5 Deliberative Process (DP)**

Did you revise the UFD conclusion for GenX?

And, sorry Greg, I did not receive your voicemail.

-Andrew

Andrew Kraft, PhD | Senior Science Advisor
Chemical and Pollutant Assessment Division | Center for Public Health and Environmental Assessment | U.S. EPA
1200 Pennsylvania Avenue, N.W. | Mail Code 8623R | Washington, DC 20460
Cell: (202)734-1420

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, September 14, 2020 11:02 AM
**To:** Kraft, Andrew <Kraft.Andrew@epa.gov>
**Cc:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** PFBA DB UF
**Importance:** High

Andrew,
I wanted to touch base with you on the PFBA assessment, specifically the DB UF. I know Greg left you a VM, but I wanted to follow up. We are currently in discussions with our upper management on our rationale for our DB UF for GenX. There are some statements in PFBA that generalize about short chain PFAS and repro dev effects. It would be helpful if we could touch base on this, we are concerned that the generalizations may impact GenX.

Thanks,
Jamie

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/11/2021 5:57:47 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: TSCA regulatory nexus

Yeah. I wonder if I should do that. After out experience with GenX, I feel like they should be called out.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, February 11, 2021 12:45 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: TSCA regulatory nexus

You could always add it back in as a suggested edit ☺

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Thursday, February 11, 2021 12:05 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: TSCA regulatory nexus

Not asking you to do anything. Just want you to know that she cut my dagger statement from Q2:

**Ex. 5 Deliberative Process (DP)**

---

**From:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Sent:** Thursday, February 11, 2021 11:58 AM
**To:** Burneson, Eric <Burneson.Eric@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Rodgers-Jenkins, Crystal <Rodgers-Jenkins.Crystal@epa.gov>; Albert, Ryan <Albert.Ryan@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: TSCA regulatory nexus

Folks,

Attached for your review are draft responses to OPPT's questions re: program review of their risk evaluations and suggestions for improvement. I would like to send these back to Susanna by next Wednesday so please send edits by next Tuesday, if possible. Let me know if you need more time.

Thanks,
Colleen

---

**From:** Flaherty, Colleen
**Sent:** Wednesday, February 10, 2021 5:05 PM
**To:** Burneson, Eric <Burneson.Eric@epa.gov>; Betsy Behl <Behl.Betsy@epa.gov>
**Cc:** Rodgers-Jenkins, Crystal <Rodgers-Jenkins.Crystal@epa.gov>; Albert, Ryan <Albert.Ryan@epa.gov>; Jacobs, Brittany

<Jacobs.Brittany@epa.gov>
**Subject:** TSCA regulatory nexus

Betsy, Eric - Just a quick note to let you know that yesterday OPPT teed up the regulatory nexus issue for their AA nominee Michal Freedhoff, and she is interested in reconsidering the previous admin's position. She will likely reach out to the other AAs to get their feedback. We should probably give Radhika a heads up. OPPT will also schedule a meeting for career staff to begin discussing practical ways to navigate the statutory overlap – I will send you the invite when I get it. More tomorrow, including written responses to OPPT's questions for you to review.

Thanks,
Colleen

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/1/2018 2:22:31 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: genX cancer
**Attachments**: draft internal deliberative review - nonCBI rev. 3.8.doc

Statement from the last OPPT provided draft before Tracy Behrsing departed:

**Ex. 5 Deliberative Process (DP)**

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/6/2020 6:30:37 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: talk about GenX and PFBA

Jamie,
Britt and I talked, and I scheduled another meeting for Thursday at 2pm. You have a lot of tentative meetings on your schedule at the moment, so I just picked a spot and went with it. We can totally move the meeting to whenever works. Here's what we propose for moving forward.

1. Continue to read, digest, and respond to the ORD comments.
2. Ex. 5 Deliberative Process (DP)
3. Revise as needed.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, October 6, 2020 7:52 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: talk about GenX and PFBA

Sure! Greg and I can keep the meeting and let you know where we land.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, October 06, 2020 7:51 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: talk about GenX and PFBA

Okay can you guys meet today, we need to let BB know what the ORD comments say and that we would need to make some revisions before sending. Sorry this is falling to you guys.

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, October 06, 2020 7:46 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: talk about GenX and PFBA

Agree that we will need a little time to update a few things, but I don't think we should change too much so everyone has looked at the same thing.

Hope you feel better soon, Jamie!

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, October 06, 2020 7:42 AM

**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: talk about GenX and PFBA

I think we need to make some changes before intraAgency. Ex. 5 Deliberative Process (DP) So we're going to need some time.

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Tuesday, October 6, 2020 7:41 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: talk about GenX and PFBA

You two should meet without me today to talk about PFBA and Betsy's plan for GenX. My only question is would we make changes to GenX write up before intra agency review? Ex. 5 Deliberative Process (DP) (we will have OCSPP and ORD) then revise. Sorry, Ex. 6 Personal Privacy (PP)

Thanks,
Jamie

-----Original Appointment-----
**From:** Strong, Jamie
**Sent:** Thursday, October 01, 2020 1:28 PM
**To:** Miller, Gregory; Jacobs, Brittany
**Subject:** talk about GenX and PFBA
**When:** Tuesday, October 06, 2020 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

Sorry it's the only time I have

---

## Join Microsoft Teams Meeting

Ex. 6 Personal Privacy (PP) Washington DC (Toll)

Local numbers | Reset PIN | Learn more about Teams | Meeting options

By participating in EPA hosted virtual meetings and events, you are consenting to abide by the agency's terms of use. In addition, you acknowledge that content you post may be collected and used in support of FOIA and eDiscovery activities.

---

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/15/2018 6:07:49 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Draft GenX chemicals toxicity values for agency review

# Ex. 5 Deliberative Process (DP)

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:46 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

## Ex. 5 Deliberative Process (DP)

**From:** Miller, Gregory
**Sent:** Tuesday, May 15, 2018 1:44 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

I looked at the critical study (18405-1037) and the chronic 2-year rat study (18405-1238) side by side. The studies get the same Overall Score of 1.2 so both fall in their High category. This is good I guess. There are some differences between the studies. Ex. 5 Deliberative Process (DP)

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:22 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Can someone look at eval of our principal study compared to chronic study?

**From:** Jacobs, Brittany
**Sent:** Tuesday, May 15, 2018 1:07 PM

**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Just took a quick glance and it looks like it's their (OPPTs) entire systematic review process outlined. The first 50 plus pages goes over process and the study-specific evaluations don't start until the last 30ish pages.

---

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:03 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Draft GenX chemicals toxicity values for agency review

Oh my…its very long. I wonder if its consistent with language in our lit eval section.

---

**From:** Camacho, Iris
**Sent:** Tuesday, May 15, 2018 12:48 PM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Henry, Tala <Henry.Tala@epa.gov>; Benson, Amy <Benson.Amy@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Fehrenbacher, Cathy <Fehrenbacher.Cathy@epa.gov>; Selby-Mohamadu, Yvette <Selby-Mohamadu.Yvette@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Attached is OPPT's Appendix B supporting the GenX assessment. Let me know if you have any questions.

**********

Iris A. Camacho, Ph.D.
Branch Chief, Assessment Branch 1
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
William Jefferson Clinton Building East, 6308-A
Washington, DC 20460
Phone: 202-564-1229
Work hours: 8:00 am – 4:30 pm
Work cell phone: 202-304-8648
Telework phone: 301-977-3667 or 301-613-5215
Email: camacho.iris@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 5/15/2018 2:50:56 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Internal Agency Review of PFAS Toxicity Value Assessments- GenX and PFBS

Shouldn't she check with her management before doing that?

---

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 10:34 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Internal Agency Review of PFAS Toxicity Value Assessments- GenX and PFBS

Know what I just realized, Ex. 5 Deliberative Process (DP)

---

**From:** Moore, Alexa **On Behalf Of** Jones, Samantha
**Sent:** Tuesday, May 15, 2018 9:56 AM
**To:** Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Lowit, Anna <Lowit.Anna@epa.gov>; Laessig, Susan <Laessig.Susan@epa.gov>; Hamernik, Karen <Hamernik.Karen@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Axelrad, Daniel <Axelrad.Daniel@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>; Flowers, Lynn <Flowers.Lynn@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Pollard, Solomon <Pollard.Solomon@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Mangino, Mario <mangino.mario@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Hiatt, Gerald <Hiatt.Gerald@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Maddaloni, Mark <Maddaloni.Mark@epa.gov>; rogers, rick <rogers.rick@epa.gov>; Allenbach, Becky <Allenbach.Becky@epa.gov>; Harris, Kimberly <harris.kimberly@epa.gov>; Morton, Michael <Morton.Michael@epa.gov>; Shields, Amy <Shields.Amy@epa.gov>; Bahrman, Sarah <Bahrman.Sarah@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Anderson-Carnahan, Linda <Anderson-Carnahan.Linda@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Champlin, Anna <Champlin.Anna@epa.gov>; Shams, Dahnish <Shams.Dahnish@epa.gov>; Lavoie, Emma <Lavoie.Emma@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Thayer, Kris <thayer.kris@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Holsinger, Hannah <Holsinger.Hannah@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>
**Subject:** RE: Internal Agency Review of PFAS Toxicity Value Assessments- GenX and PFBS

Good Morning,

Please see modified email below which includes the Agency Review Contacts list and PFAS Regional Coordinators table.

---

Hello all,

We are pleased to provide the **draft human health toxicity assessments of GenX and PFBS** for your review. This is a 2-week review timeframe. To provide comments please provide only one document from each region and program

containing compiled office comments. The assessments for review are available here and your version containing comments (or other written comments) should be uploaded in this site.

Four specific notes for this review are provided below:

- Please focus comments only on substantive issues.
- Combine all comments from an office or region into a single document, then upload to the GenX or PFBS folder on the SharePoint site. Only the Agency Review contacts have access to the site (see below). Sharing of the materials and compilation of comments from your respective office or region is via the designated Agency Review contact. Contacts please coordinate within your respective offices, especially noting the PFAS Regional Coordinators listed in the table below.
- Please note that GenX Appendix B is not included and will be sent as a separate file as soon as possible.
- Post all comments to the SharePoint site by **COB Friday, May 25.**

We appreciate your feedback and will carefully consider it in the assessments. In consideration of the Administrator's timeline, we will not be able to provide a formal response to comments.

**Agency Review Contacts**
**Office of Water** Greg Miller
**Office of Chemical Safety and Pollution Prevention**
- **Office of Pesticide Programs** Anna Lowit
- **Office of Pollution Prevention and Toxics** Susan Laessig
- **Office of Science Coordination and Policy** Karen Hamernik

**Office of Land and Emergency Management** Kathleen Raffaele
**Office of Air and Radiation**
- **Office of Air Quality Protection & Standards** Deirdre Murphy and Amy Vasu
- **Office of Transportation & Air Quality** Marion Hoyer

**Office of Policy** Dan Axelrad
**Office of Children's Health Protection** Rebecca Dzubow and Sue Euling
**Office of Research and Development** Lynn Flowers
**Region 1** Meghan Cassidy
**Region 2** Marian Olsen
**Region 3** Martin Gehlhaus
**Region 4** Solomon Pollard and Glenn Adams
**Region 5** Mario Mangino
**Region 6** Anna Milburn
**Region 7** Kelly Schumacher
**Region 8** Bob Benson
**Region 9** Gerald Hiatt
**Region 10** Lon Kissinger

**Table of PFAS Regional Coordinators**

| | | |
|---|---|---|
| Region 1 | Meghan Cassidy | Cassidy.Meghan@epa.gov |
| Region 2 | Mark Maddaloni | Maddaloni.Mark@epa.gov |
| Region 3 | Rick Rogers | rogers.rick@epa.gov |
| Region 4 | Becky Allenbach | Allenbach.Becky@epa.gov |
| Region 5 | Kim Harris | harris.kimberly@epa.gov |
| Region 6 | Michael Morton | Morton.michael@Epa.gov |
| Region 7 | Amy Shields | Shields.Amy@epa.gov |
| Region 8 | Sarah Bahrman | Bahrman.Sarah@epa.gov |

| | | |
|---|---|---|
| Region 9 | Matthew Small | Small.Matthew@epa.gov |
| Region 10 | Linda Anderson-Carnahan | Anderson-Carnahan.Linda@epa.gov |

Thanks,

Alexa Moore
Environmental Administrative Support
Contractor
National Center for Environmental Assessment
US EPA ORD/NCEA
Moore.alexa@epa.gov
202-564-2762

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 5/15/2018 5:44:10 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject:** RE: Draft GenX chemicals toxicity values for agency review
**Attachments:** Dupont 1037v1238.pdf

# Ex. 5 Deliberative Process (DP)

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:22 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Can someone look at eval of our principal study compared to chronic study?

**From:** Jacobs, Brittany
**Sent:** Tuesday, May 15, 2018 1:07 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Just took a quick glance and it looks like it's their (OPPTs) entire systematic review process outlined. The first 50 plus pages goes over process and the study-specific evaluations don't start until the last 30ish pages.

**From:** Strong, Jamie
**Sent:** Tuesday, May 15, 2018 1:03 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: Draft GenX chemicals toxicity values for agency review

Oh my…its very long. I wonder if its consistent with language in our lit eval section.

**From:** Camacho, Iris
**Sent:** Tuesday, May 15, 2018 12:48 PM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Henry, Tala <Henry.Tala@epa.gov>; Benson, Amy <Benson.Amy@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Fehrenbacher, Cathy <Fehrenbacher.Cathy@epa.gov>; Selby-Mohamadu, Yvette <Selby-Mohamadu.Yvette@epa.gov>
**Subject:** RE: Draft GenX chemicals toxicity values for agency review

Attached is OPPT's Appendix B supporting the GenX assessment. Let me know if you have any questions.

**********

Iris A. Camacho, Ph.D.
Branch Chief, Assessment Branch 1
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
William Jefferson Clinton Building East, 6308-A

Washington, DC 20460
Phone: 202-564-1229
Work hours: 8:00 am – 4:30 pm
Work cell phone: 202-304-8648
Telework phone: 301-977-3667 or 301-613-5215
Email: camacho.iris@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/5/2018 7:51:54 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: DAF for 28 day mouse
**Attachments**: GenX RfD w BW3_4 & UF _ RfD v6_5_18.xlsx

I'll double check the math tomorrow morning, but I think it's ok. Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/11/2018 2:22:23 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: FW: Notes from GenX & PFBS Schedule meeting

---

**From:** Miller, Gregory
**Sent:** Thursday, June 7, 2018 3:43 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Notes from GenX & PFBS Schedule meeting

GenX/PFBS scheduling meeting
6/7/18

- Ex. 5 Deliberative Process (DP)

-----Original Appointment-----
**From:** Grevatt, Peter
**Sent:** Thursday, May 31, 2018 9:54 AM
**To:** Grevatt, Peter; Behl, Betsy; Bahadori, Tina; Mclain, Jennifer; Strong, Jamie; Jones, Samantha; Holsinger, Hannah; Burneson, Eric; Tiago, Joseph; Gillespie, Andrew
**Cc:** Miller, Gregory; Nagle, Deborah
**Subject:** GenX and PFBS Schedule
**When:** Thursday, June 7, 2018 3:00 PM-4:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** 2203 EPA East - Peter Grevatt's conference line - Ex. 6 Personal Privacy (PP)

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 6/14/2018 11:03:50 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: review of genx

I'm teleworking today too. 202-566-2310

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, June 13, 2018 5:37 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: review of genx

Awesome!! I'll continue to work on our interagency comment response document for the 20th. I dealt with the HERO duplicates issue and sent that to Samantha. Samantha sent back the charge questions, so it looks like that is done and ready to be sent out! Yay!

As a reminder, I'm teleworking tomorrow so I ca Ex. 6 Personal Privacy (PP) . I set up my phone to forward my calls, but can also be reached at Ex. 6 Personal Privacy (PP)

---

**From:** Strong, Jamie
**Sent:** Wednesday, June 13, 2018 2:17 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** review of genx

Made it to prob form. Will pick up tomorrow.

**Jamie B. Strong | Chief, Human Health Risk Assessment Branch**
Health and Ecological Criteria Division | Office of Science and Technology | Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW, 4301-T, Washington, DC 20460
☎ Phone: (202) 566-0056 | strong.jamie@epa.gov

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/18/2018 6:53:11 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: CSS AOPDD Webinar - Conley - GenX effects in rats

Ok

Greg Miller, Senior Environmental Health Scientist
Team Lead, Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Jacobs, Brittany
**Sent:** Tuesday, September 18, 2018 2:49 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: CSS AOPDD Webinar - Conley - GenX effects in rats

Hi Greg,

Can you listen in on this? I have this demo until 4pm.

Britt

-----Original Appointment-----
**From:** Strong, Jamie
**Sent:** Friday, September 07, 2018 7:43 AM
**To:** Strong, Jamie; Jacobs, Brittany; Miller, Gregory; Hines, Ronald; Abedini, Jaleh; Angrish, Michelle; Ankley, Gerald; Barron, Mace; Biales, Adam; Blackwell, Brett; Botteri, Nicole; Carleton, Jim; Carswell, Gleta; Cavallin, Jenna; Cheng, Wan-Yun; Chorley, Brian; Collette, Tim; Conley, Justin; Conolly, Rory; Corton, Chris; Degitz, Sigmund; Doering, Jonathon; Edwards, Stephen; Ekman, Drew; El-Masri, Hisham; Fay, Kellie; Franzosa, Jill; Fry, Meridith; Ge, Yue; Gessner, Lauren; Gilbert, Mary E.; Gray, Earl; Haselman, Jon; Hassan, Iman; Hazari, Mehdi; Herr, David; Hester, Susan; Hill, Thomas; Hines, David; Hornung, Michael; Hubal, Elaine; Hughes, MichaelF; Hunter, Sid; Ives, Cataia; Jarabek, Annie; Jensen, Kathleen; Jeremy Leonard; Joachim Pleil; Judson, Richard; Kahl, Michael; Kenyon, Elaina; Klinefelter, Gary; Kodavanti, Prasada Rao; Korte, Joe; Kosian, Pat; LaLone, Carlie; Laws, Susan; Leonard, Jeremy; Lyons, David; Miller, David; Miller-Dykeman, Ashley; Mills, Lesley; Mills, Marc; Mortensen, Holly; Moser, Ginger; Nelms, Mark; Nelson, Gail; Nelson, Garret; Olker, Jennifer; OShaughnessy, Katie; Phillips, Katherine; Pittman, Maureen; Pleil, Joachim; Ramasamy, Santhini; Scatterday, Allysan; Schreinemachers, Dina; Simmons, Jane; Stoker, Tammy; Suarez, Samuel; Suen, Alisa; Tal, Tamara; Tan, Cecilia; Teng, Quincy; Thai, Sheau-Fung; VanEmon, Jeanette; Veronesi, Bellina; Wang, Rong-Lin; Wehmas, Leah; Wilson, Vickie; Frithsen, Jeff; Cowden, John; Tietge, Joe
**Subject:** Fw: CSS AOPDD Webinar - Conley - GenX effects in rats
**When:** Tuesday, September 18, 2018 2:00 PM-2:45 PM (UTC-06:00) Central Time (US & Canada).
**Where:** dial: Ex. 6 Personal Privacy (PP)

**From:** Gray, Earl on behalf of Villeneuve, Dan
**Sent:** Thursday, September 6, 2018 7:30 PM
**To:** Strong, Jamie; Hines, Ronald
**Subject:** Fwd: CSS AOPDD Webinar - Conley - GenX effects in rats
**When:** Tuesday, September 18, 2018 3:00 PM-3:45 PM.
**Where:** dial: [redacted] Ex. 6 Personal Privacy (PP)

FYI.
Earl

Sent from my iPhone

Begin forwarded message:

> **From:** "Villeneuve, Dan" <Villeneuve.Dan@epa.gov>
> **To:** "Abedini, Jaleh" <abedini.jaleh@epa.gov>, "Angrish, Michelle" <Angrish.Michelle@epa.gov>, "Ankley, Gerald" <Ankley.Gerald@epa.gov>, "Barron, Mace" <Barron.Mace@epa.gov>, "Biales, Adam" <Biales.Adam@epa.gov>, "Blackwell, Brett" <Blackwell.Brett@epa.gov>, "Botteri, Nicole" <Botteri.Nicole@epa.gov>, "Carleton, Jim" <Carleton.Jim@epa.gov>, "Carswell, Gleta" <Carswell.Gleta@epa.gov>, "Cavallin, Jenna" <Cavallin.Jenna@epa.gov>, "Cheng, Wan-Yun" <Cheng.Wan-Yun@epa.gov>, "Chorley, Brian" <Chorley.Brian@epa.gov>, "Collette, Tim" <Collette.Tim@epa.gov>, "Conley, Justin" <Conley.Justin@epa.gov>, "Conolly, Rory" <Conolly.Rory@epa.gov>, "Corton, Chris" <Corton.Chris@epa.gov>, "Degitz, Sigmund" <Degitz.Sigmund@epa.gov>, "Doering, Jonathon" <doering.jonathon@epa.gov>, "Edwards, Stephen" <Edwards.Stephen@epa.gov>, "Ekman, Drew" <Ekman.Drew@epa.gov>, "El-Masri, Hisham" <El-Masri.Hisham@epa.gov>, "Fay, Kellie" <Fay.Kellie@epa.gov>, "Franzosa, Jill" <Franzosa.Jill@epa.gov>, "Fry, Meridith" <Fry.Meridith@epa.gov>, "Ge, Yue" <Ge.Yue@epa.gov>, "Gessner, Lauren" <gessner.lauren@epa.gov>, "Gilbert, Mary E." <Gilbert.Mary@epa.gov>, "Gray, Earl" <Gray.Earl@epa.gov>, "Haselman, Jon" <Haselman.Jon@epa.gov>, "Hassan, Iman" <Hassan.Iman@epa.gov>, "Hazari, Mehdi" <Hazari.Mehdi@epa.gov>, "Herr, David" <Herr.David@epa.gov>, "Hester, Susan" <Hester.Susan@epa.gov>, "Hill, Thomas" <hill.thomas@epa.gov>, "Hines, David" <hines.david@epa.gov>, "Hornung, Michael" <Hornung.Michael@epa.gov>, "Hubal, Elaine" <Hubal.Elaine@epa.gov>, "Hughes, MichaelF" <Hughes.MichaelF@epa.gov>, "Hunter, Sid" <Hunter.Sid@epa.gov>, "Ives, Cataia" <Ives.Cataia@epa.gov>, "Jarabek, Annie" <Jarabek.Annie@epa.gov>, "Jensen, Kathleen" <Jensen.Kathleen@epa.gov>, "Jeremy Leonard" <jaleonar@ncsu.edu>, "Joachim Pleil" <Pleil@unc.edu>, "Judson, Richard" <Judson.Richard@epa.gov>, "Kahl, Michael" <Kahl.Michael@epa.gov>, "Kenyon, Elaina" <Kenyon.Elaina@epa.gov>, "Klinefelter, Gary" <Klinefelter.Gary@epa.gov>, "Kodavanti, Prasada Rao" <Kodavanti.Prasada@epa.gov>, "Korte, Joe" <Korte.Joe@epa.gov>, "Kosian, Pat" <Kosian.Pat@epa.gov>, "LaLone, Carlie" <lalone.carlie@epa.gov>, "Laws, Susan" <Laws.Susan@epa.gov>, "Leonard, Jeremy" <Leonard.Jeremy@epa.gov>, "Lyons, David" <Lyons.David@epa.gov>, "Miller, David" <Miller.DavidJ@epa.gov>, "Miller-Dykeman, Ashley" <miller-dykeman.ashley@epa.gov>, "Mills, Lesley" <Mills.Lesley@epa.gov>, "Mills, Marc" <mills.marc@epa.gov>, "Mortensen, Holly"

<Mortensen.Holly@epa.gov>, "Moser, Ginger" <Moser.Ginger@epa.gov>, "Nelms, Mark" <Nelms.Mark@epa.gov>, "Nelson, Gail" <Nelson.Gail@epa.gov>, "Nelson, Garret" <Nelson.Garret@epa.gov>, "Olker, Jennifer" <olker.jennifer@epa.gov>, "OShaughnessy, Katie" <OShaughnessy.Katie@epa.gov>, "Phillips, Katherine" <Phillips.Katherine@epa.gov>, "Pittman, Maureen" <Pittman.Maureen@epa.gov>, "Pleil, Joachim" <Pleil.Joachim@epa.gov>, "Ramasamy, Santhini" <Ramasamy.Santhini@epa.gov>, "Scatterday, Allysan" <scatterday.allysan@epa.gov>, "Schreinemachers, Dina" <Schreinemachers.Dina@epa.gov>, "Simmons, Jane" <Simmons.Jane@epa.gov>, "Stoker, Tammy" <Stoker.Tammy@epa.gov>, "Suarez, Samuel" <Suarez.Samuel@epa.gov>, "Suen, Alisa" <suen.alisa@epa.gov>, "Tal, Tamara" <Tal.Tamara@epa.gov>, "Tan, Cecilia" <Tan.Cecilia@epa.gov>, "Teng, Quincy" <Teng.Quincy@epa.gov>, "Thai, Sheau-Fung" <Thai.Sheau-Fung@epa.gov>, "VanEmon, Jeanette" <VanEmon.Jeanette@epa.gov>, "Veronesi, Bellina" <Veronesi.Bellina@epa.gov>, "Wang, Rong-Lin" <Wang.Rong-Lin@epa.gov>, "Wehmas, Leah" <wehmas.leah@epa.gov>, "Wilson, Vickie" <Wilson.Vickie@epa.gov>, "Frithsen, Jeff" <Frithsen.Jeff@epa.gov>, "Cowden, John" <Cowden.John@epa.gov>, "Tietge, Joe" <Tietge.Joe@epa.gov>
**Subject: CSS AOPDD Webinar - Conley - GenX effects in rats**

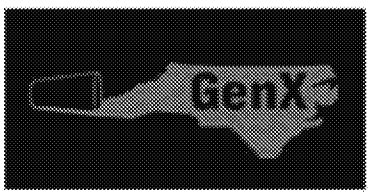
Adverse maternal, fetal, and postnatal effects of oral gestational exposure to hexafluoropropylene oxide dimer acid (GenX) in Sprague-Dawley rats

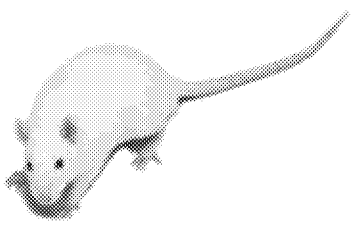
[cid:image003.jpg@01D445FB.13A252E0]
Presenter: Dr. Justin Conley, Ph.D., NHEERL, Toxicity Assessment Division, Research Triangle Park, NC

Tuesday, September 18, 2018
3:00-3:45 PM Eastern (2:00-2:45 Central)

Dial-in: Ex. 6 Personal Privacy (PP)
Conf ID:
Adobe Connect URL: Ex. 6 Personal Privacy (PP)

If you encounter a busy signal when dialing in, try one of the alternative numbers found here: Ex. 6 Personal Privacy (PP)



Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 9/20/2018 3:16:37 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: FRN for GenX and PFBS

# Ex. 5 Deliberative Process (DP)

Revision:

# Ex. 5 Deliberative Process (DP)

Is it too late to change?

---

**From:** Miller, Gregory
**Sent:** Thursday, September 20, 2018 11:13 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Subject:** RE: FRN for GenX and PFBS

Right.

The first step in the process for developing a CRA is understanding the toxicity of each of the related chemicals. This is the stage where we are now. A separate CRA would identify a common toxic endpoint and assess the multiple components together.

It's not that we can or can't do a CRA today, it's that we are just getting started understanding PFAS tox.

---

**From:** Strong, Jamie
**Sent:** Thursday, September 20, 2018 11:10 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: FRN for GenX and PFBS

This isnt true though…in theory you could look at a common endpoint and come up with a cumulative risk assessment. We just haven't done it.

---

**From:** Flaherty, Colleen
**Sent:** Thursday, September 20, 2018 11:08 AM
**To:** Jones, Samantha <Jones.Samantha@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>
**Subject:** RE: FRN for GenX and PFBS

What do you think of this?

## I. What are EPA's Draft Toxicity Assessments?

# Ex. 5 Deliberative Process (DP)

**From:** Jones, Samantha
**Sent:** Thursday, September 20, 2018 10:08 AM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Messier, Dawn <Messier.Dawn@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Mattas-Curry, Lahne <Mattas-Curry.Lahne@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>
**Subject:** RE: FRN for GenX and PFBS

Hi all,

The PFBS team (cc'd here) added a few other edits to consider as we finalize the FRN. See attachment (track changes and comment bubbles from Lambert).

Thanks,
Samantha

**Samantha J. Jones, PhD**
**NCEA Associate Director**
**HHRA Interim Deputy National Program Director**
USEPA, ORD/NCEA
RRB 51214
(o) 202-564-6794; (m) 703-943-7990

**From:** Jones, Samantha
**Sent:** Wednesday, September 19, 2018 9:53 PM
**To:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Messier, Dawn <Messier.Dawn@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Mattas-Curry, Lahne <Mattas-

Curry.Lahne@epa.gov>
**Subject:** RE: FRN for GenX and PFBS

Hi Colleen,

Thanks for sharing, overall changes look good. Please see a few places where I've incorporated edits and comment bubbles.

Thanks,
Samantha

**Samantha J. Jones, PhD**
**NCEA Associate Director**
**HHRA Interim Deputy National Program Director**
USEPA, ORD/NCEA
RRB 51214
(o) 202-564-6794; (m) 703-943-7990

---

**From:** Flaherty, Colleen
**Sent:** Wednesday, September 19, 2018 3:22 PM
**To:** Messier, Dawn <Messier.Dawn@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>
**Cc:** Strong, Jamie <Strong.Jamie@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Mattas-Curry, Lahne <Mattas-Curry.Lahne@epa.gov>
**Subject:** FRN for GenX and PFBS

Hi Dawn and Samantha,

Attached is the latest version of the FRN, which we edited to be consistent with the latest language in the comms materials. The comms have not yet been reviewed by our political folks or federal partners, but I wanted OGC and ORD to have the latest version even if it is a moving target. Also, Samantha, take a look at the statement on cumulative effects in response to OMB's suggestion ("There are currently insufficient data to assess potential cumulative (mixture) effects of GenX chemicals and PFBS, and their possible interactions with other PFAS and/or other chemicals").

Thanks,
Colleen

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/11/2018 4:33:24 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: RE: Any further comments from the comms folks?

Nothing technical on GenX from NASA, but you knew this comment was coming…

EPA also needs to clearly state how these action values, now said to be IRIS RfDs, will be used in EPA's existing hierarchy of action levels.

---

**From:** Strong, Jamie
**Sent:** Thursday, October 11, 2018 12:28 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Any further comments from the comms folks?

Yeah so we are going to get tasked with responding to those science comments. Can you guys start pulling out which ones are like this and generating responses. This is maddening.

---

**From:** Jacobs, Brittany
**Sent:** Thursday, October 11, 2018 12:22 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Any further comments from the comms folks?

I found this comment from DOD on the technical fact sheet particularly annoying:

**Ex. 5 Deliberative Process (DP)**

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**From:** Strong, Jamie
**Sent:** Thursday, October 11, 2018 12:03 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Any further comments from the comms folks?

Yikes!

---

**From:** Drinkard, Andrea
**Sent:** Thursday, October 11, 2018 11:37 AM
**To:** Mattas-Curry, Lahne <Mattas-Curry.Lahne@epa.gov>

**Cc:** Wadlington, Christina <Wadlington.Christina@epa.gov>; Hubbard, Carolyn <Hubbard.Carolyn@epa.gov>; Champlin, Anna <Champlin.Anna@epa.gov>; Lalley, Cara <Lalley.Cara@epa.gov>; Harper, Ashley <harper.ashley@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Any further comments from the comms folks?

Here are the full set of comments. After looking through them, I'm wondering if it would make sense for someone on this chain to take a first pass at reviewing the comments and suggesting edits. There are some that are relatively straightforward, while others raises science questions and specifics about risk that I'm not sure how best to handle. If someone is willing to take a short out that, let me know. Otherwise I will start working my way through the docs and will share track changes versions as they're ready.

Thanks.

ATSDR
<< Message: RE: [Non-DoD Source] Draft Communications Materials for Draft Toxicity Assessments (UNCLASSIFIED) >>
NASA
<< Message: RE: Draft Communications Materials for Draft Toxicity Assessments >>
OMB
<< Message: NASA comments, EPA draft Comm documents, PFBS and GenX >>
DoD
<< Message: RE: Time to check in today? EOM >>

**From:** Mattas-Curry, Lahne
**Sent:** Thursday, October 11, 2018 10:14 AM
**To:** Drinkard, Andrea <Drinkard.Andrea@epa.gov>
**Cc:** Wadlington, Christina <Wadlington.Christina@epa.gov>; Hubbard, Carolyn <Hubbard.Carolyn@epa.gov>; Champlin, Anna <Champlin.Anna@epa.gov>
**Subject:** RE: Any further comments from the comms folks?

Ok sounds good. Please copy Anna Champlin on the comments since I am out tomorrow and Monday.
Thank you!

**From:** Drinkard, Andrea
**Sent:** Thursday, October 11, 2018 10:13 AM
**To:** Mattas-Curry, Lahne <Mattas-Curry.Lahne@epa.gov>
**Cc:** Wadlington, Christina <Wadlington.Christina@epa.gov>; Hubbard, Carolyn <Hubbard.Carolyn@epa.gov>; Champlin, Anna <Champlin.Anna@epa.gov>
**Subject:** Re: Any further comments from the comms folks?

I will send an email with all the comments. I was planning on working through them today.

On Oct 11, 2018, at 10:12 AM, Mattas-Curry, Lahne <Mattas-Curry.Lahne@epa.gov> wrote:

Should I start working on the ATSDR comments or did we get more from other agencies?

**Lahne Mattas-Curry**
U.S. EPA
Office of Research and Development
Communications
Office: 202.564.3165
cell: 202.573.0346

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 10/15/2018 11:48:34 AM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** RE: Miller, Gregory shared "GenX Chem Comms material _ Interagency Review comments 10 11 18" with you.

Ok. The document has been relocated to this address on our HHRAB sharepoint. Use this link instead of the other I sent.

**Ex. 6 Personal Privacy (PP)**

**From:** Strong, Jamie
**Sent:** Friday, October 12, 2018 7:03 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX Chem Comms material _ Interagency Review comments 10 11 18" with you.

Okay, lets stop here and I will talk to BB. She pushed back.

**From:** Jacobs, Brittany
**Sent:** Thursday, October 11, 2018 5:12 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Miller, Gregory shared "GenX Chem Comms material _ Interagency Review comments 10 11 18" with you.

Didn't get too far. The DOD comments are really frustrating.

**From:** Miller, Gregory
**Sent:** Thursday, October 11, 2018 1:28 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Miller, Gregory shared "GenX Chem Comms material _ Interagency Review comments 10 11 18" with you.

Drafting list of Comms GenX technical comments underway...

This link only works for the direct recipients of this message.

GenX Chem Comms material _ Interagency Review comments 10 11 18

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Microsoft Corporation, One Microsoft Way, Redmond, WA 98052

Appointment

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 11/7/2018 8:16:49 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject**: FW: GenX Assessment
**Location**: DCRoomWest5231M/DC-CCW-OST

**Start**: 12/3/2018 4:00:00 PM
**End**: 12/3/2018 5:00:00 PM
**Show Time As**: Tentative

-----Original Appointment-----
**From:** Behl, Betsy
**Sent:** Wednesday, November 7, 2018 3:05 PM
**To:** Behl, Betsy; Ohanian, Edward; Strong, Jamie; Miller, Gregory; lhaws@toxstrategies.com
**Subject:** GenX Assessment
**When:** Monday, December 3, 2018 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomWest5231M/DC-CCW-OST

Conference call-in: Ex. 6 Personal Privacy (PP)
Conference ID: Ex. 6 Personal Privacy (PP)

Appointment

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 11/13/2018 1:10:29 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject:** FW: Upcoming release of Draft Human Health Toxicity Assessments for GenX Chemicals and PFBS for public review and comment
**Location:** Conference: **Ex. 6 Personal Privacy (PP)**

**Start:** 11/13/2018 3:00:00 PM
**End:** 11/13/2018 4:00:00 PM
**Show Time As:** Tentative

**Required Attendees:** Strong, Jamie; Jacobs, Brittany

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**From:** Strong, Jamie
**Sent:** Tuesday, November 13, 2018 8:00 AM
**To:** Jacobs, Brittany; Miller, Gregory
**Subject:** FW: Upcoming release of Draft Human Health Toxicity Assessments for GenX Chemicals and PFBS for public review and comment

**From:** Grevatt, Peter
**Sent:** Friday, November 09, 2018 4:14 PM
**To:** Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Bertrand, Charlotte <Bertrand.Charlotte@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Breen, Barry <Breen.Barry@epa.gov>; Nickerson, William <Nickerson.William@epa.gov>; Forsgren, Lee <Forsgren.Lee@epa.gov>; Orme-Zavaleta, Jennifer <Orme-Zavaleta.Jennifer@epa.gov>; Rodan, Bruce <rodan.bruce@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Starfield, Lawrence <Starfield.Lawrence@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Neugeboren, Steven <Neugeboren.Steven@epa.gov>; Szaro, Deb <Szaro.Deb@epa.gov>; Mugdan, Walter <Mugdan.Walter@epa.gov>; Rodrigues, Cecil <rodrigues.cecil@epa.gov>; Heard, Anne <Heard.Anne@epa.gov>; Holst, Linda <holst.linda@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>; Gray, David <gray.david@epa.gov>; Chu, Ed <Chu.Ed@epa.gov>; Thomas, Deb <thomas.debrah@epa.gov>; Jordan, Deborah <Jordan.Deborah@epa.gov>; Pirzadeh, Michelle <Pirzadeh.Michelle@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Holsinger, Hannah <Holsinger.Hannah@epa.gov>; Scheifele, Hans <Scheifele.Hans@epa.gov>; Impellitteri, Christopher <Impellitteri.Christopher@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Speth, Thomas <Speth.Thomas@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>
**Cc:** Mclain, Jennifer <Mclain.Jennifer@epa.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>; Tiago, Joseph <Tiago.Joseph@epa.gov>

**Subject:** Upcoming release of Draft Human Health Toxicity Assessments for GenX Chemicals and PFBS for public review and comment

Good Afternoon,

As soon as the middle of next week, EPA will be posting an advanced copy of the federal register notice (and supporting documents) requesting public review and comment on, "Draft Human Health Toxicity Assessments for Hexafluoropropylene Oxide Dimer Acid and its Ammonium Salt (GenX Chemicals) and for Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate."

Can each region please reach out to their respective states informing them of our current timing? Also, please note that prior to the release, we will be sharing an advanced copy of the materials for your distribution to the states as well.

In addition, EPA will be holding teleconference Tuesday, November 13, 2018 from 10- 11 am to answer any questions that the states may have. Please share the below with any states that may be interested in joining us:

Conference: **Ex. 6 Personal Privacy (PP)**

Conference

Please let me know if you have any questions.

Thank you.

Appointment

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 11/13/2018 1:32:06 PM
**To:** Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]

**Subject:** Canceled: FW: Upcoming release of Draft Human Health Toxicity Assessments for GenX Chemicals and PFBS for public review and comment
**Location:** Conference: **Ex. 6 Personal Privacy (PP)**

**Start:** 11/13/2018 3:00:00 PM
**End:** 11/13/2018 4:00:00 PM
**Show Time As:** Free

**Importance:** High

**Required Attendees:** Strong, Jamie; Jacobs, Brittany

---

**From:** Strong, Jamie
**Sent:** Tuesday, November 13, 2018 8:00 AM
**To:** Jacobs, Brittany; Miller, Gregory
**Subject:** FW: Upcoming release of Draft Human Health Toxicity Assessments for GenX Chemicals and PFBS for public review and comment

**From:** Grevatt, Peter
**Sent:** Friday, November 09, 2018 4:14 PM
**To:** Drinkard, Andrea <Drinkard.Andrea@epa.gov>; Bertrand, Charlotte <Bertrand.Charlotte@epa.gov>; Koerber, Mike <Koerber.Mike@epa.gov>; Breen, Barry <Breen.Barry@epa.gov>; Nickerson, William <Nickerson.William@epa.gov>; Forsgren, Lee <Forsgren.Lee@epa.gov>; Orme-Zavaleta, Jennifer <Orme-Zavaleta.Jennifer@epa.gov>; Rodan, Bruce <rodan.bruce@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Starfield, Lawrence <Starfield.Lawrence@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Neugeboren, Steven <Neugeboren.Steven@epa.gov>; Szaro, Deb <Szaro.Deb@epa.gov>; Mugdan, Walter <Mugdan.Walter@epa.gov>; Rodrigues, Cecil <rodrigues.cecil@epa.gov>; Heard, Anne <Heard.Anne@epa.gov>; Holst, Linda <holst.linda@epa.gov>; Thiede, Kurt <thiede.kurt@epa.gov>; Gray, David <gray.david@epa.gov>; Chu, Ed <Chu.Ed@epa.gov>; Thomas, Deb <thomas.debrah@epa.gov>; Jordan, Deborah <Jordan.Deborah@epa.gov>; Pirzadeh, Michelle <Pirzadeh.Michelle@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Holsinger, Hannah <Holsinger.Hannah@epa.gov>; Scheifele, Hans <Scheifele.Hans@epa.gov>; Impellitteri, Christopher <Impellitteri.Christopher@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Speth, Thomas <Speth.Thomas@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>
**Cc:** Mclain, Jennifer <Mclain.Jennifer@epa.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>; Tiago, Joseph <Tiago.Joseph@epa.gov>

**Subject:** Upcoming release of Draft Human Health Toxicity Assessments for GenX Chemicals and PFBS for public review and comment

Good Afternoon,

As soon as the middle of next week, EPA will be posting an advanced copy of the federal register notice (and supporting documents) requesting public review and comment on, "Draft Human Health Toxicity Assessments for Hexafluoropropylene Oxide Dimer Acid and its Ammonium Salt (GenX Chemicals) and for Perfluorobutane Sulfonic Acid (PFBS) and Related Compound Potassium Perfluorobutane Sulfonate."

Can each region please reach out to their respective states informing them of our current timing? Also, please note that prior to the release, we will be sharing an advanced copy of the materials for your distribution to the states as well.

In addition, EPA will be holding teleconference Tuesday, November 13, 2018 from 10- 11 am to answer any questions that the states may have. Please share the below with any states that may be interested in joining us:

Conference: Ex. 6 Personal Privacy (PP)

Conference ID

Please let me know if you have any questions.

Thank you.

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/4/2019 6:49:34 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: GenX public comment screening spreadsheet + G: Pub Comment pdfs

Here are the links in the same email...

Ex. 6 Personal Privacy (PP)

Message

**From:** Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent:** 2/14/2019 5:29:05 PM
**To:** Jones, Samantha [Jones.Samantha@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Thayer, Kris [thayer.kris@epa.gov]; Kraft, Andrew [Kraft.Andrew@epa.gov]
**CC:** Behl, Betsy [Behl.Betsy@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**BCC:** Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** RE: Systematic Review
**Attachments:** GenX Chem OCSPP Systematic Review _ source Public Comment draft.pdf

-----Original Appointment-----
**From:** Jones, Samantha
**Sent:** Thursday, February 14, 2019 11:14 AM
**To:** Strong, Jamie; Jacobs, Brittany; Miller, Gregory; Thayer, Kris; Kraft, Andrew
**Cc:** Behl, Betsy; Bahadori, Tina; Soares, Barbara
**Subject:** Systematic Review
**When:** Thursday, February 14, 2019 12:00 PM-12:30 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** DCRoomRRB71214-NCEADir for RRB folks (everyone else Skype, unless you want to come to RRB!)

Hi all,

This was the earliest time I could fine in everyone's busy schedules for us to briefly get together to talk about scope of the systematic review questions for GenX chemicals. Getting us all on the same page at the beginning will facilitate the next steps.

Betsy and Tina, I have you guys as optional.

Thanks,
Samantha

.....

→ Join Skype Meeting

Trouble Joining? Try Skype Web App

## Join by phone

Toll number: Ex. 6 Personal Privacy (PP) (Dial-in Number)
English (United States)

Find a local number

Conference ID: Ex. 6 Personal Privacy (PP)

Forgot your dial-in PIN? | Help

.....

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 1/31/2018 4:41:18 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: RE: Charge Questions
**Attachments**: draft genx charge.docx

Hey. A few minor edits. I put them in a redline doc.

---

**From:** Jacobs, Brittany
**Sent:** Wednesday, January 31, 2018 11:27 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Charge Questions

Hi Greg,

Here are the very general charge questions. I know we can edit these down the road, but is there anything obviously missing here?

**Charge Questions**
Please provide detailed responses to the charge questions below.

1.
2.
3.
4.

Ex. 5 Deliberative Process (DP)

Thanks for you input!

Britt

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/23/2018 2:58:47 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: FW: PFAS Toxicity Values Update Meeting
**Attachments**: draft internal deliberative review - nonCBI rev redline. 2.22.docx

If you're curious about Tracy's recent changes, I did a redline compare to the draft that came before it.

---

**From:** Behrsing, Tracy
**Sent:** Thursday, February 22, 2018 9:49 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Aubee, Catherine <Aubee.Catherine@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>; Henry, Tala <Henry.Tala@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Benson, Amy <Benson.Amy@epa.gov>
**Subject:** RE: PFAS Toxicity Values Update Meeting

Hi Brittany –

Apologies for sending another version, but we made some minor edits in the draft review and also incorporated a short summary of a 2018 paper recently identified during the literature search for completeness.

We are working on a write-up pertaining to the review method/strategy and will send once we have a draft.

Tracy

---

**From:** Behrsing, Tracy
**Sent:** Tuesday, February 20, 2018 12:47 PM
**To:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>
**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Aubee, Catherine <Aubee.Catherine@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>; Henry, Tala <Henry.Tala@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: PFAS Toxicity Values Update Meeting

Brittany-

Please find attached the revised draft with the minor edits I mentioned at today's meeting.

We will work on a write-up pertaining to guideline studies, etc.

Tracy

---

**From:** Strong, Jamie
**Sent:** Tuesday, February 20, 2018 12:20 PM
**To:** Henry, Tala <Henry.Tala@epa.gov>; Behrsing, Tracy <behrsing.tracy@epa.gov>; Babcock, Amy <babcock.amy@epa.gov>; Aubee, Catherine <Aubee.Catherine@epa.gov>

**Cc:** Behl, Betsy <Behl.Betsy@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: PFAS Toxicity Values Update Meeting

---

**From:** Behl, Betsy
**Sent:** Tuesday, February 20, 2018 8:15 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Fwd: PFAS Toxicity Values Update Meeting

Sent from my iPhone

Begin forwarded message:

> **From:** "Grevatt, Peter" <Grevatt.Peter@epa.gov>
> **Date:** February 19, 2018 at 9:10:38 AM EST
> **To:** "Gillespie, Andrew" <Gillespie.Andrew@epa.gov>, "Mclain, Jennifer" <Mclain.Jennifer@epa.gov>
> **Cc:** "Behl, Betsy" <Behl.Betsy@epa.gov>, "Jones, Samantha" <Jones.Samantha@epa.gov>, "Bahadori, Tina" <Bahadori.Tina@epa.gov>, "Lavoie, Emma" <Lavoie.Emma@epa.gov>
> **Subject: RE: PFAS Toxicity Values Update Meeting**
>
> Thanks Andy. Agenda for tomorrow's meeting will include:
>
> - Workplan with milestones for development of GenX and PFBS assessments (GenX workplan is attached)
> - Identification of materials for briefing of state representatives and federal partners (materials will need to be provided in advance)
> - Identification of process, key dates and lead for management of peer review for GenX and PFBS
>
> ---
>
> **From:** Gillespie, Andrew
> **Sent:** Friday, February 16, 2018 1:01 PM
> **To:** Grevatt, Peter <Grevatt.Peter@epa.gov>; Mclain, Jennifer <Mclain.Jennifer@epa.gov>
> **Subject:** RE: PFAS Toxicity Values Update Meeting
>
> Hi Peter, Jennifer, is there an agenda or objective for this meeting Tuesday afternoon? Just wondering since I assume we will be giving a tox value update also at the 12 meeting of the cross agency group same day. Thanks, Andy
>
> Andrew J. R. Gillespie, Ph. D.
> Associate Director, US EPA/ORD/NERL
> ORD Executive Lead for PFAS R&D
>
> -----Original Appointment-----
> **From:** Grevatt, Peter
> **Sent:** Thursday, February 15, 2018 10:14 AM
> **To:** Grevatt, Peter; Lavoie, Emma; Lambert, Jason; Gillespie, Andrew; Behl, Betsy; Mclain, Jennifer; Strong, Jamie
> **Cc:** Tiago, Joseph; Owens, Beth; Bahadori, Tina
> **Subject:** PFAS Toxicity Values Update Meeting

**When:** Tuesday, February 20, 2018 4:00 PM-4:45 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** 2203 EPA East - Ex. 6 Personal Privacy (PP)

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/28/2018 11:48:38 AM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Slides from Earl Gray's GenX research presentation - 2/27/18

If you sort the files by filename, they should follow the order of presentation.

**Ex. 6 Personal Privacy (PP)**

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 2/28/2018 8:22:34 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: genx tomorrow at 1-2

**Ex. 6 Personal Privacy (PP)**

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/21/2021 2:02:22 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

This is a good sign.

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Benson, Bob <Benson.Bob@epa.gov>
**Sent:** Wednesday, April 21, 2021 9:38 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Region 8 has no comments on the GenX assessment.

---

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, April 21, 2021 7:28 AM
**To:** Lowit, Anna <Lowit.Anna@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Saili, Katerine <saili.katerine@epa.gov>; Dockins, Chris <Dockins.Chris@epa.gov>; Cooperstein, Sharon <Cooperstein.Sharon@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Lloyd, Christine <Lloyd.Christine@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Sundar, Bhooma <sundar.bhooma@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Subject:** RE: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Hello Agency Reviewers,
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Thank you!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch

Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Miller, Gregory
**Sent:** Thursday, March 25, 2021 11:59 AM
**To:** Lowit, Anna <Lowit.Anna@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Saili, Katerine <saili.katerine@epa.gov>; Chris Dockins <Dockins.Chris@epa.gov>; Cooperstein, Sharon <Cooperstein.Sharon@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Lloyd, Christine <Lloyd.Christine@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Sundar, Bhooma <sundar.bhooma@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Hello all,

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This email is to initiate the internal agency review of the revised GenX Chemicals toxicity assessment. Shortly, you will be granted access to the SharePoint site (see link below) so that you will be able to obtain the GenX Chemicals draft toxicity assessment as well as the Response to Public Comments document. Please feel free to circulate the materials within your respective office, we just ask that as the points of contact, that you compile and upload one set of comments from your respective office. We request that you post comments to the SharePoint site by **COB Friday, April 23rd**.

**Ex. 6 Personal Privacy (PP)**

We appreciate your feedback. Please let me know if there are any questions.

Thank you!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/22/2021 12:26:54 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: paragraphs on OMB involvement

FYI. We'll see what happens. Going to send GenX to external peer review next week assuming there aren't any show stoppers in the Agency Review comments that are due Friday. My plan is that we make all the edits from peer review and agency review in one lump when you get back. Hope you all are doing ok! We miss you!

greg

---

**From:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Sent:** Wednesday, April 21, 2021 1:49 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>
**Cc:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: paragraphs on OMB involvement

Sent forward with one edit --- see below

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, April 21, 2021 12:53 PM
**To:** Nagle, Deborah <Nagle.Deborah@epa.gov>
**Cc:** Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** paragraphs on OMB involvement

I made some changes. Many thanks for sending

**********
**Office of Water (OW) Science Documents**

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Deborah G. Nagle, Director
Office of Science and Technology
1200 Pennsylvania Ave, NW
Washington, DC 20460
Tel: (202) 564-1185

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 10/15/2020 5:30:19 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: Joyce's input on ORD FW: The Gen-X paper
**Attachments**: DRAFT FINAL GenX Chemicals Toxicity Assessment_Tech Edit_7.27.20_sjj_ak_jad-JMD.docx

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Wednesday, October 14, 2020 9:50 AM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** FW: The Gen-X paper

take a look

---

**From:** Donohue, Joyce <Donohue.Joyce@epa.gov>
**Sent:** Tuesday, October 13, 2020 6:31 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** The Gen-X paper

Dear Jamie:

I am sorry about the delay. I kept loosing contact with pulse secure. I then had to redo parts I had already done because I had not saved before loss of contact.

**Ex. 5 Deliberative Process (DP)**

Have Greg or Brittany call me if they have any questions.

Joyce

Message

**From**: Miller, Gregory [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=0E889CDC40224A5484182092E4824FA7-GMILLE03]
**Sent**: 4/22/2021 7:48:21 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**BCC**: Miller.Gregory@epa.gov
**Subject**: FW: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics
**Attachments**: DRAFT GenX Chemicals Toxicity Assessment_2 4 21 CLEAN_OLEM comments.docx

Good news. Nothing major from OLEM.

Jamie do you want to be included as I share the comments for curiosity sake?

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Raffaele, Kathleen <raffaele.kathleen@epa.gov>
**Sent:** Thursday, April 22, 2021 3:37 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Foster, Stiven <Foster.Stiven@epa.gov>
**Subject:** RE: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

Greg,

OLEM appreciates very much the opportunity to review the revised GenX Chemicals Toxicity Assessment. In general, we found the document to be very well written and we had only minor comments. We support that the document is ready to be released for External Peer Review.

Per the instructions on the email, I have uploaded the file with OLEM comments onto the Sharepoint Site. Please let me know if you have any questions or if we need to follow up in any way.

Thank you,

Kathleen

Kathleen Raffaele, Ph.D.

Senior Science Advisor
Policy Analysis and Regulatory Management Staff
Office of Land and Emergency Management (OLEM)
U.S. EPA

Telephone (202) 566-0301

Mailcode 5103T

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Wednesday, April 21, 2021 9:28 AM
**To:** Lowit, Anna <Lowit.Anna@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Saili, Katerine <saili.katerine@epa.gov>; Dockins, Chris <Dockins.Chris@epa.gov>; Cooperstein, Sharon <Cooperstein.Sharon@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Lloyd, Christine <Lloyd.Christine@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Sundar, Bhooma <sundar.bhooma@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Euling, Susan <Euling.Susan@epa.gov>
**Subject:** RE: Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

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Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
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1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

---

**From:** Miller, Gregory
**Sent:** Thursday, March 25, 2021 11:59 AM
**To:** Lowit, Anna <Lowit.Anna@epa.gov>; Gillespie, Andrew <Gillespie.Andrew@epa.gov>; Stedeford, Todd <Stedeford.Todd@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>; Raffaele, Kathleen <raffaele.kathleen@epa.gov>; Murphy, Deirdre <Murphy.Deirdre@epa.gov>; Hoyer, Marion <hoyer.marion@epa.gov>; Vasu, Amy <Vasu.Amy@epa.gov>; Saili, Katerine <saili.katerine@epa.gov>; Chris Dockins <Dockins.Chris@epa.gov>; Cooperstein, Sharon <Cooperstein.Sharon@epa.gov>; Dzubow, Rebecca <Dzubow.Rebecca@epa.gov>; Lloyd, Christine <Lloyd.Christine@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Cassidy, Meghan <Cassidy.Meghan@epa.gov>; Olsen, Marian <Olsen.Marian@epa.gov>; Gehlhaus, Martin <Gehlhaus.Martin@epa.gov>; Adams, Glenn <Adams.Glenn@epa.gov>; Koporec, Kevin <Koporec.Kevin@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Sundar, Bhooma <sundar.bhooma@epa.gov>; Milburn, Anna <Milburn.Anna@epa.gov>; Schumacher, Kelly <Schumacher.Kelly@epa.gov>; Benson, Bob <Benson.Bob@epa.gov>; Small, Matthew <Small.Matthew@epa.gov>; Stralka, Daniel <Stralka.Daniel@epa.gov>; Kissinger, Lon <Kissinger.Lon@epa.gov>
**Cc:** Jacobs, Brittany <Jacobs.Brittany@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Internal Agency review of the GenX Chemicals Toxicity Assessment - link to review materials and logistics

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**Ex. 6 Personal Privacy (PP)**

We appreciate your feedback. Please let me know if there are any questions.

Thank you!

Greg Miller, Senior Environmental Health Scientist
Human Health Risk Assessment Branch
Office of Science and Technology, Health and Ecological Criteria Division
US Environmental Protection Agency, Office of Water
1200 Pennsylvania Ave, NW (MC 4304T)
Washington, DC 20460

phone: (202) 566-2310

Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 8/12/2020 5:08:50 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]
**CC:** Owens, Beth [Owens.Beth@epa.gov]

**Subject:** Canceled: Finalizing GenX and PFBS assessments
**Attachments:** Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment; Canceled: Finalizing GenX and PFBS assessments; Untitled Attachment; Untitled Attachment
**Location:** Microsoft Teams Meeting

**Start:** 3/10/2021 6:00:00 PM
**End:** 3/10/2021 6:30:00 PM
**Show Time As:** Free

**Importance:** High

**Recurrence:** Weekly
every 2 week(s) on Wednesday from 1:00 PM to 1:30 PM
**Required Attendees:** Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason
**Optional Attendees:** Owens, Beth

Canceling and going to monthly meetings 4/22/21

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## Join Microsoft Teams Meeting

Ex. 6 Personal Privacy (PP) ates, Washington DC (Toll)

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By participating in EPA hosted virtual meetings and events, you are consenting to abide by the agency's terms of use. In addition, you acknowledge that content you post may be collected and used in support of FOIA and eDiscovery activities.

---

Appointment

**From**: Snow, Samantha [Samantha.Snow@icf.com]
**Sent**: 7/1/2021 3:54:48 PM
**To**: Snow, Samantha [Samantha.Snow@icf.com]; Foster, Caroline [Caroline.Foster@icf.com]; Cronk, Ryan [Ryan.Cronk@icf.com]; Tracy, Wren [Wren.Tracy@icf.com]; Jones, Kaedra [kaedra.jones@icf.com]; Lin, Cynthia [Cynthia.Lin@icf.com]; Sorina Eftim [sorina.eftim@icf.com]; Soares, Barbara [soares.barbara@epa.gov]; Lindberg, Casey [Lindberg.Casey@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Etzel, Ruth [Etzel.Ruth@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jasperse, Caroline [Caroline.Jasperse@icf.com]
**CC**: Rocha Melogno, Lucas [Lucas.RochaMelogno@icf.com]; Fitzharris, Lauren [Lauren.FitzHarris@icf.com]; Holsinger, Hannah [Holsinger.Hannah@epa.gov]

**Subject**: Canceled: HECD Weekly Meeting
**Attachments**: Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 7/6/2021 5:00:00 PM
**End**: 7/6/2021 6:30:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: (none)

Hi Everyone,

These meetings will carry us through to the end of the 6-month extension.

Thanks!

Sam

---

# Microsoft Teams meeting

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tes, Arlington

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Appointment

**From:** Behl, Betsy [Behl.Betsy@epa.gov]
**Sent:** 2/6/2019 9:14:52 PM
**To:** Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC:** Owens, Beth [Owens.Beth@epa.gov]

**Subject:**
**Attachments:**

Ex. 6 Personal Privacy (PP)

**Location:**

**Start:** 6/5/2019 1:00:00 PM
**End:** 6/5/2019 2:00:00 PM
**Show Time As:** Free

**Importance:** High

**Recurrence:** Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees:** Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees:** Owens, Beth

Replacing with Teams

Join Skype Meeting

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Toll number: Ex. 6 Personal Privacy (PP) English (United States)
Find a local number

Conference ID: 1239896
Forgot your dial-in PIN? | Help

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 10/15/2020 7:02:55 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Jacobs, Brittany 1:22 PM:

there's a version of GenX with Joyce comments?

Miller, Gregory 1:22 PM:

Ex. 6 Personal Privacy (PP) you weren't on that email?

Jacobs, Brittany 1:23 PM:

I could have been but I have been getting a lot of emails recently

Miller, Gregory 1:23 PM:

i'm going to send her the 9/9 tech edited version with no ORD or Joyce comments. sound right? i still don't know what she's asking for. she want's the current draft

Jacobs, Brittany 1:24 PM:

I've been working on the one with ORD's comments

Jacobs, Brittany 1:24 PM:

been trying to make some edits to the language where it's easy to make the change

Jacobs, Brittany 1:24 PM:

I guess we could send both lol yeah I'm not sure what she is asking for either

Miller, Gregory 1:25 PM:

that's cool. is that "the current draft"? Ex. 5 Deliberative Process (DP) that we sent to ord and oppt

Jacobs, Brittany 1:25 PM:

I'm really not sure

Jacobs, Brittany 1:26 PM:

did Joyce respond to ORD's comments?

Miller, Gregory 1:26 PM:

hold on. let me dig

Miller, Gregory 2:21 PM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 2:21 PM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 2:44 PM:

yeah, I'm really over this

Jacobs, Brittany 2:44 PM:

I think the other way is an intra-agency review and then we have all program offices except for OPPT agreeing that there needs to be a DB UF

Jacobs, Brittany 2:45 PM:

then we go to them and say 6 program offices think a DB UF is warranted while 1 does not

Jacobs, Brittany 2:45 PM:

**Ex. 5 Deliberative Process (DP)**

Miller, Gregory 2:45 PM:
it sounds like charlotte is locked in. she's not going to allow it out until we change the draft. she knows we'll get backing from other program offices there. that hurts her position

Jacobs, Brittany 2:46 PM:
yeah I mean if she isn't even going to let it go to intra-agency review then it should be a scientific integrity issue

Miller, Gregory 2:47 PM:
yup.

Miller, Gregory 2:48 PM:
i think it'd also be ok to sit on it for a month or so

Jacobs, Brittany 2:48 PM:
i wish we would've pushed for intra-agency review over external peer review

Jacobs, Brittany 2:48 PM:
but whatever

Jacobs, Brittany 2:48 PM:
yes

Jacobs, Brittany 2:48 PM:
or until this next fenton paper comes out

Jacobs, Brittany 2:48 PM:
justin's paper has just been accepted

Miller, Gregory 2:49 PM:
we can say that given the high level of concern, we want to wait for 2 new papers in this area that might help clarify the UFd need

Jacobs, Brittany 2:50 PM:
yeah that might be helpful

Jacobs, Brittany 2:50 PM:
I think it's going to sit anyway, guess we will see what happens on Monday

Miller, Gregory 2:51 PM:
what do we know about those studies?

Jacobs, Brittany 2:51 PM:
I'm also curious to see how Betsy reacts to all of this

Miller, Gregory 2:51 PM:
i'm sure betsy will want us to fight

Miller, Gregory 2:51 PM:
and would never consider passing it back to OPPT for completion

Jacobs, Brittany 2:51 PM:
I'm not sure they saw effects at doses similar to the liver

Jacobs, Brittany 2:52 PM:
but I can't be sure without modeling because they are repro/dev effects

Jacobs, Brittany 2:52 PM:
so I'm not sure what the PODs would look like

Jacobs, Brittany 2:52 PM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 2:52 PM:

I'm going to dig into it, E Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 2:53 PM:

Ex. 5 Deliberative Process (DP)

2:54 PM Jacobs, Brittany asked to send you "5D315129.PNG".

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 10/22/2020 3:43:11 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 9:18 AM:

care to take a stab at guessing when RegDet 5 would need Li?

Jacobs, Brittany 9:18 AM:
let's ask OGWDW to figure that out

Jacobs, Brittany 9:19 AM:
should be 5 years after the final reg det 4 is posted

Jacobs, Brittany 9:19 AM:
we could say 2025 and ask OGWDW if that seems right

Jacobs, Brittany 9:20 AM:
final reg det should be posted in 2021

Miller, Gregory 9:20 AM:
regdet 4 in 2021

Jacobs, Brittany 9:21 AM:
right that's what I'm hearing and then we would want the assessment ~ a year before we would need to post prelim reg det 5

Miller, Gregory 9:21 AM:
got it.

Jacobs, Brittany 10:57 AM:
wow John is so nice! Hope we get to work with him on PFOA/PFOS

Miller, Gregory 11:03 AM:
yes, if you have a choice, go with john. Dustin Kapraun seeks nice too

Miller, Gregory 11:03 AM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 11:04 AM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 11:15 AM:
yeah I think Paul is working on the other PFAS (PFBA at least) so I won't be surprised if he gets looped in

Miller, Gregory 11:15 AM:
well. we should think about getting access to a pbpk contractor that can edit his writing.

Miller, Gregory 11:16 AM:
because i can't

Jacobs, Brittany 11:16 AM:
lol, sounds good or I will just hound him until things make sense to me

Miller, Gregory 11:16 AM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 11:17 AM:
well let's hope we get John and maybe someone else

Jacobs, Brittany 11:17 AM:
maybe Chris B can help us too

Jacobs, Brittany 11:17 AM:
he is part of that group and that's the work he did in ORD apparently

Miller, Gregory 11:18 AM:
good. like i always say, find the nice people and work with them

Jacobs, Brittany 11:18 AM:
yeah agree!!

Jacobs, Brittany 11:19 AM:
I'm trying to keep in mind that we have to do an intra-agency review and have to respond to these comments anyway, but I'm tired of responding to comments for GenX at the moment

Miller, Gregory 11:19 AM:
so tired

Miller, Gregory 11:20 AM:
i'm serious about giving it back to OPPT

Miller, Gregory 11:20 AM:
**Ex. 5 Deliberative Process (DP)**

Jacobs, Brittany 11:21 AM:
I still want it but I can see my mind changing if we keep having to battle like this

Jacobs, Brittany 11:21 AM:
Jamie said Betsy called her at 8pm last night super mad, she said she would fill me in later so I wonder what that's about

Miller, Gregory 11:22 AM:
i have a feeling that OPPT is going to be making some changes in 2021.

Miller, Gregory 11:22 AM:
mad at us?

Jacobs, Brittany 11:22 AM:
no not mad at us

Jacobs, Brittany 11:22 AM:
what kind of changes do you think?

Miller, Gregory 11:22 AM:
bring DW into the TSCA assessments somehow

Jacobs, Brittany 11:22 AM:
I guess mad at ppl above her, guess something else must have happened

Miller, Gregory 11:23 AM:
it makes no sense to asses risk to an individual while leaving out a path of exposure

Miller, Gregory 11:23 AM:
this will require collaboration between the offices and resolution of UFd

Jacobs, Brittany 11:23 AM:
right right

Miller, Gregory 11:29 AM:

at least its only 1 page

Jacobs, Brittany 11:29 AM:
Yeah, and I just don't agree with her subchronic to chronic analysis

Jacobs, Brittany 11:30 AM:
and just copied and pasted our rationale again lol

Jacobs, Brittany 11:31 AM:
ugh I want to work on other projects

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 10/15/2020 6:26:49 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Jacobs, Brittany 1:22 PM:

there's a version of GenX with Joyce comments?

Miller, Gregory 1:22 PM:

Ex. 6 Personal Privacy (PP) you weren't on that email?

Jacobs, Brittany 1:23 PM:

I could have been but I have been getting a lot of emails recently

Miller, Gregory 1:23 PM:

i'm going to send her the 9/9 tech edited version with no ORD or Joyce comments. sound right? i still don't know what she's asking for. she want's the current draft

Jacobs, Brittany 1:24 PM:

I've been working on the one with ORD's comments

Jacobs, Brittany 1:24 PM:

been trying to make some edits to the language where it's easy to make the change

Jacobs, Brittany 1:24 PM:

I guess we could send both lol yeah I'm not sure what she is asking for either

Miller, Gregory 1:25 PM:

that's cool. is that "the current draft"? t Ex. 5 Deliberative Process (DP) that we sent to ord and oppt

Jacobs, Brittany 1:25 PM:

I'm really not sure

Jacobs, Brittany 1:26 PM:

did Joyce respond to ORD's comments?

Miller, Gregory 1:26 PM:

hold on. let me dig

Miller, Gregory 2:21 PM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 2:21 PM:

Ex. 5 Deliberative Process (DP)

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/30/2020 11:37:26 AM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 7:20 AM:

what do you think of the ORD comments on GenX?

Jacobs, Brittany 7:20 AM:
I haven't gotten through the in text comments but the overall comments make it seem Ex. 5 Deliberative Process (DP)

Miller, Gregory 7:20 AM:
ugh

Jacobs, Brittany 7:21 AM:
I mean they definitely don't say that

Jacobs, Brittany 7:21 AM:
but that's the feeling I'm getting

Jacobs, Brittany 7:21 AM:
especially after reading PFBA

Jacobs, Brittany 7:22 AM:
I don't know

Miller, Gregory 7:22 AM:
i was kind of put off by their reading of the "recommendation" in the RfD/RfC guidance.

Jacobs, Brittany 7:24 AM:
yeah it's similar to charlotte's reasoning isn't it?

Miller, Gregory 7:25 AM:
yup

Miller, Gregory 7:26 AM:
it's actually the conclusion of a journal article. the passage doesn't read to me as an endorsement.

Jacobs, Brittany 7:26 AM:
right and it's from dourson

Miller, Gregory 7:27 AM:
yes

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 10/28/2020 2:21:10 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 8:48 AM:

do you think we need to meet w/ Jamie to talk about hte ORD comments at 11:30? i had her hold the time because i hadn't thought about the ORD comments in weeks. but then you found the topics of conversation doc so i'm thinking maybe we don't need the time

Jacobs, Brittany 8:50 AM:
I don't have a strong opinion either way, I'm going back through the ORD comments now to refresh and adding to the topics. I'm fine not meeting. I think working through OPPT's comments helped to address some of ORD's comments

Miller, Gregory 8:50 AM:
ok. i'll tell jamie to cancel the 1130

Jacobs, Brittany 8:51 AM:
okay sounds good

Jacobs, Brittany 8:54 AM:
I also think I will ask them about some of Anna's comments

Miller, Gregory 8:54 AM:
yeah. jason and beth were added to the meeting invite so they can help out there i hope

Jacobs, Brittany 8:55 AM:
great!

Jacobs, Brittany 8:56 AM:
i talked to jason yesterday too and he didn't agree with Anna's comments about the thyroid or the or this suggested nexus between the liver being compromised so the placental effects may be confounded

Miller, Gregory 8:58 AM:
well that's good. but i still think we're stuck unless they let it go to agency review

Jacobs, Brittany 8:58 AM:
yeah for sure

Miller, Gregory 10:02 AM:
you know what's weird? Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Miller, Gregory 10:02 AM:
i felt like that was so obvious when ORD commented on it. i guess not

Jacobs, Brittany 10:03 AM:
yeah, because OPP and OPPT don't know UFs

Jacobs, Brittany 10:04 AM:
I just had a nice convo with Justin and Earl about Anna's comments

Jacobs, Brittany 10:08 AM:
i think it would be good to send Justin and Earl the assessment for review

Jacobs, Brittany 10:08 AM:
they know all of the literature

Miller, Gregory 10:09 AM:
we can talk to jamie about that at some point

Jacobs, Brittany 10:11 AM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 10:11 AM:
the weight of a pregnant rodent*

Miller, Gregory 10:12 AM:
did you catch any of the NAS PFAS meeting yesterday? they got into the tox but it was general to all pfas

Jacobs, Brittany 10:13 AM:
no I didn't, I'm pretty bogged down with PFOA/PFOS at the moment

Jacobs, Brittany 10:13 AM:
Jamie said Joyce and Casey were taking notes so I was hoping to read through those

Miller, Gregory 10:14 AM:
i took pix of a bunch of slides. i didn't have time to listen as they presented them all though.

Jacobs, Brittany 10:14 AM:
nice

Jacobs, Brittany 10:15 AM:
I think the thing that worries me most about GenX is that it has such a short half life and is still causing all of these effects

Miller, Gregory 10:15 AM:
the one thing that jumped out at me is the immunotox and decrease vaccine response data. they tied it in with Covid

Jacobs, Brittany 10:15 AM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 10:15 AM:
(my concern not the covid thing you just sent)

Miller, Gregory 10:17 AM:
yeah, genx appears to be on the more potent side.

Jacobs, Brittany 10:18 AM:
right, the narrative you hear with PFAS is that PFOA and PFOS are so bad because of their long half lives and that they accumulate over time

Jacobs, Brittany 10:18 AM:
but GenX does neither of those things at low doses and still causes effects

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 10/28/2020 2:15:39 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 8:48 AM:

do you think we need to meet w/ Jamie to talk about hte ORD comments at 11:30? i had her hold the time because i hadn't thought about the ORD comments in weeks. but then you found the topics of conversation doc so i'm thinking maybe we don't need the time

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**Ex. 5 Deliberative Process (DP)**

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Miller, Gregory 10:15 AM:
the one thing that jumped out at me is the immunotox and decrease vaccine response data. they tied it in with Covid

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 11/3/2020 11:57:13 AM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 6:38 AM:

i had a horrible thought while i was trying to sleep last night that somebody could say Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 6:39 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 6:40 AM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 6:40 AM:

right

Jacobs, Brittany 6:41 AM:

i mean the argument that we make is that there are effects we see and we don't know if those effects will occur at lower dose ranges

Jacobs, Brittany 6:43 AM:

or there are effects that haven't been measured

Jacobs, Brittany 6:43 AM:

I think that's different than effects might be worse if we have a longer study

Jacobs, Brittany 6:43 AM:

and the subchronic to chronic is pretty specific to the liver effects

Miller, Gregory 6:45 AM:

right. ok. i'm overthinking

Jacobs, Brittany 6:46 AM:

I'm not too worried about that one...I think Allen would've picked up on it if something was there since that was already his perspective

Miller, Gregory 6:46 AM:

right

Miller, Gregory 6:47 AM:

now that i think about it more, i think i was mixing up the text included in the UFs with the text that was included in the UFd. that's why it's not good to think about these things in the middle of the night.

Miller, Gregory 6:47 AM:

turns out it was all a nightmare

Jacobs, Brittany 6:51 AM:

lolol well I'm glad it was a mix-up!!

Jacobs, Brittany 6:56 AM:

GenX generally has been a bit of a nightmare

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 11/3/2020 12:11:17 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 6:38 AM:

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Ex. 5 Deliberative Process (DP)

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Ex. 5 Deliberative Process (DP)

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Ex. 5 Deliberative Process (DP)

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turns out it was all a nightmare

Jacobs, Brittany 6:51 AM:

lolol well I'm glad it was a mix-up!!

Jacobs, Brittany 6:56 AM:

GenX generally has been a bit of a nightmare

Miller, Gregory 7:04 AM:
agree

Miller, Gregory 7:05 AM:
at least it's not arsenic

Jacobs, Brittany 7:07 AM:
haha, yes, I'm not too familiar with that assessment but it seems to be the worse case scenario...I think you're the third person that's said that to me as a comparator

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 4/30/2020 2:51:46 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 8:57 AM:

hey. i'm seeking affirmation. t Ex. 5 Deliberative Process (DP)
right?

Miller, Gregory 8:57 AM:
was there anything else?

Jacobs, Brittany 9:00 AM:
yeah i think that's the main reasons

Jacobs, Brittany 9:01 AM:
placental lesions and gestational weight gain could be additional adverse effects

Jacobs, Brittany 9:02 AM:
this part is important too and new

Jacobs, Brittany 9:02 AM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 9:03 AM:
we have internal dose data that indicates GenX is accumulating in the embryo

Miller, Gregory 9:03 AM:
ok

Miller, Gregory 9:03 AM:
are you calling in to this CCl meeting?

Jacobs, Brittany 9:04 AM:
i don't have the invite

Jacobs, Brittany 9:04 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 9:04 AM:
forget i mentioned it then

Jacobs, Brittany 9:05 AM:

lol okay, is it exciting stuff?

Miller, Gregory 9:05 AM:
no. it's just too much right now

Jacobs, Brittany 9:07 AM:
yeah for sure

Jacobs, Brittany 9:07 AM:
i feel like we shouldn't rush the response to commetns

Jacobs, Brittany 9:07 AM:
I feel like Betsy shouldn't see that until we get her edits on the draft

Miller, Gregory 9:07 AM:
jamie says she likes to see them side by side

Jacobs, Brittany 9:08 AM:
and our edits from ORD and Bevin/Sue

Miller, Gregory 9:08 AM:
true on that

Jacobs, Brittany 9:08 AM:
if she has major comments on the draft, that's going to change our response to comments

Miller, Gregory 10:38 AM:
hi. what do you think about decimals and sig figs?

Jacobs, Brittany 10:39 AM:
lol I don't know what the hell is going on, can we chat quick?

Miller, Gregory 10:39 AM:
ok. i'll call you

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 4/30/2020 3:57:40 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany, Strong, Jamie

Miller, Gregory 8:57 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 8:57 AM:
was there anything else?

Jacobs, Brittany 9:00 AM:
yeah i think that's the main reasons

Jacobs, Brittany 9:01 AM:
placental lesions and gestational weight gain could be additional adverse effects

Jacobs, Brittany 9:02 AM:
this part is important too and new

Jacobs, Brittany 9:02 AM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 9:03 AM:
we have internal dose data that indicates GenX is accumulating in the embryo

Miller, Gregory 9:03 AM:
ok

Miller, Gregory 9:03 AM:
are you calling in to this CCI meeting?

Jacobs, Brittany 9:04 AM:
i don't have the invite

Jacobs, Brittany 9:04 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 9:04 AM:
forget i mentioned it then

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and our edits from ORD and Bevin/Sue

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true on that

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if she has major comments on the draft, that's going to change our response to comments

Miller, Gregory 10:38 AM:
hi. what do you think about decimals and sig figs?

Jacobs, Brittany 10:39 AM:
lol I don't know what the hell is going on, can we chat quick?

Miller, Gregory 10:39 AM:
ok. i'll call you

Miller, Gregory 11:47 AM:
can you talk decimals now?

Jacobs, Brittany 11:47 AM:
yeah gonna bring up the thompson paper too

Message

**From**: Miller, Gregory [miller.gregory@epa.gov]
**Sent**: 4/16/2020 1:33:38 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Miller, Gregory 9:13 AM:

ugh. reading 6.3 now. your intro text is basically the same as the text i wrote and jamie deleted on 4/14. whatever, maybe she'll accept your version.

Jacobs, Brittany 9:14 AM:
lol awesome

Jacobs, Brittany 9:15 AM:
it's modeled after PFOA so I don't know what to do if it's deleted again

Jacobs, Brittany 9:15 AM:
I think if she isn't happy with it this time she has to tell us exactly what she wants

Miller, Gregory 9:16 AM:

**Ex. 5 Deliberative Process (DP)**

Jacobs, Brittany 9:18 AM:
lol yeah, we basically wrote the same thing didn't we

Miller, Gregory 9:19 AM:
yup. i'm not going to bother editing the section 6.3 lead in. i've already done it once and it's clear we don't know what she wants there

Miller, Gregory 9:19 AM:
we just independently wrote the same thing twice

Jacobs, Brittany 9:19 AM:
right, exactly

Jacobs, Brittany 9:20 AM:
and I said in a comment this time that it was heavily inspired by PFOA so maybe that will do it

Miller, Gregory 9:20 AM:
i'm fine with whatever works

Jacobs, Brittany 9:20 AM:
and the PFOA text is just a reword of things that were previously said

Miller, Gregory 9:21 AM:
right. it's a good doc. and a huge accomplishment. but it's not perfect

Miller, Gregory 9:21 AM:
no document is

Miller, Gregory 9:21 AM:
there's always room for improvement

Miller, Gregory 9:21 AM:
and different authors take different approaches to reach the same goal

Jacobs, Brittany 9:22 AM:
right

Jacobs, Brittany 9:22 AM:
and I think you and I like a more succinct style

Jacobs, Brittany 9:23 AM:
I don't want to repeat things 5 times

Miller, Gregory 9:23 AM:
me neither

Jacobs, Brittany 9:23 AM:
but if Jamie wants that, that's fine but I don't know how else to do that

Miller, Gregory 9:23 AM:
we already said it. we can cross-reference a specific section maybe but no need to restate concepts. it just increases the page count

Miller, Gregory 9:23 AM:
me neither

Jacobs, Brittany 9:27 AM:
unrelated, but is the document working better for you now without all the edits and comments?

Miller, Gregory 9:27 AM:
yes

Miller, Gregory 9:27 AM:
thanks for doing that.

Jacobs, Brittany 9:32 AM:
oh good good

Jacobs, Brittany 9:32 AM:
yeah it was actually fun to clean it up

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 4/30/2020 1:18:19 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 8:57 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 8:57 AM:
was there anything else?

Jacobs, Brittany 9:00 AM:
yeah i think that's the main reasons

Jacobs, Brittany 9:01 AM:
placental lesions and gestational weight gain could be additional adverse effects

Jacobs, Brittany 9:02 AM:
this part is important too and new

Jacobs, Brittany 9:02 AM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 9:03 AM:
we have internal dose data that indicates GenX is accumulating in the embryo

Miller, Gregory 9:03 AM:
ok

Miller, Gregory 9:03 AM:
are you calling in to this CCl meeting?

Jacobs, Brittany 9:04 AM:
i don't have the invite

Jacobs, Brittany 9:04 AM:

Ex. 5 Deliberative Process (DP)

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true on that

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Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 5/21/2020 6:36:27 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Jacobs, Brittany 2:28 PM:

hey Greg

Jacobs, Brittany 2:28 PM:
I just pulled this answer together if you want to edit:

Jacobs, Brittany 2:28 PM:

1. **Ex. 5 Deliberative Process (DP)**

Miller, Gregory 2:29 PM:
looks fine

Jacobs, Brittany 2:29 PM:
I don't think we need to talk about the toxicokinetics since we don't have very much data in humans (we just know that it isn't found in the urine or blood of those folks in NC)

Miller, Gregory 2:30 PM:
ok. yeah, toxicokinetics doesn't really answer the question either

Miller, Gregory 2:30 PM:
send your response to Jamie anyway

Miller, Gregory 2:30 PM:
for the record

Jacobs, Brittany 2:30 PM:
am doing that now

Miller, Gregory 2:30 PM:
some dope is going to try to answer this question for us again

Jacobs, Brittany 2:30 PM:
I have a feeling it'll come back anyway

Jacobs, Brittany 2:30 PM:
ha, exactly

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 5/7/2020 7:33:20 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Jacobs, Brittany 3:06 PM:

I was just listening to Justin Conley's presentation for SOT on his unpublished data and I am really happy we changed the subchronic to chronic UF to 10

Jacobs, Brittany 3:06 PM:
his unpublished data supports that dosing over a longer time period results in more severe effects

Jacobs, Brittany 3:06 PM:
in rats during gestation

Miller, Gregory 3:06 PM:
yeah. it's good. i heard him present to the Children's PACT yesterday too.

Jacobs, Brittany 3:07 PM:
oh probably the same presentation then!

Miller, Gregory 3:07 PM:
the glycogen thing late in gestation is also concerning. but it looks like it happens at higher dose

Jacobs, Brittany 3:07 PM:
yes!

Miller, Gregory 3:07 PM:
but the cumulative pfas thing is troubling

Jacobs, Brittany 3:07 PM:
indicates placental insufficiency like Blake suggested

Jacobs, Brittany 3:08 PM:
oh yeah, the additive effects?

Miller, Gregory 3:08 PM:
and i think the developmental immuno is a big gap

Jacobs, Brittany 3:08 PM:
with Genx, nafion and was it PFOS?

Miller, Gregory 3:08 PM:
yeah, if all of the pfas are impacting glycogen storage late in gestation

Miller, Gregory 3:08 PM:
not sure if it was pfos or -a

Jacobs, Brittany 3:08 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:09 PM:
its a niche that epa doesn't usually recognize. i think we're good with what we have but i'm curious to see what develops in that area going forward

Jacobs, Brittany 3:09 PM:
i took a pic of it...was PFOS

Miller, Gregory 3:09 PM:
i would call the decrease in vaccine effectiveness a big deal

Miller, Gregory 3:10 PM:
i.e. an adverse effect in my opinion

Jacobs, Brittany 3:10 PM:
right

Jacobs, Brittany 3:10 PM:
me too

Jacobs, Brittany 3:10 PM:
especially considering that a lot of parents are choosing not to vaccinate their kids

Jacobs, Brittany 3:10 PM:
then we have kids that have a decrease in vaccine effectiveness

Jacobs, Brittany 3:10 PM:
that's gonna impact herd immunity

Miller, Gregory 3:10 PM:
right

Jacobs, Brittany 3:11 PM:
also I am so happy the response to comments and assessment is to Betsy

Miller, Gregory 3:11 PM:
it's such a selfish assumption though.

Jacobs, Brittany 3:11 PM:
I was losing patience on response to comments lol

Miller, Gregory 3:12 PM:
it worked out. its frustrating when words that have already been approved are commented on in the rtc

Miller, Gregory 3:12 PM:
on the other hand, i just want it done so i don't really care much anymroe

Jacobs, Brittany 3:12 PM:
yeah same

Jacobs, Brittany 3:13 PM:
I was mostly annoyed that basically all of the comment responses we outsourced were b Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:13 PM:
yeah

Jacobs, Brittany 3:13 PM:
that's where I spent the most time was on the inadequate responses from other offices

Miller, Gregory 3:13 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:14 PM:
then they can receive the bad reactions that are bound to come in

Jacobs, Brittany 3:15 PM:
yeah I updated most of them but a few are still pretty bad...there isn't another chance for public comment though right?

Miller, Gregory 3:17 PM:

no, not unless things go off the rails

Jacobs, Brittany 3:17 PM:
gotcha...it'll be interesting to see what folks have to say

Jacobs, Brittany 3:17 PM:
and it'll be interesting to go through the process virtually

Miller, Gregory 3:17 PM:
yes. i think the fenton/blake comments are a good sign of what's to come

Miller, Gregory 3:18 PM:
there should be good input internally

Miller, Gregory 3:18 PM:
and then interagency will be terrible

Jacobs, Brittany 3:18 PM:
yeah, I think the blake comments will be one side and then the interagency will be the other side

Jacobs, Brittany 3:19 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:19 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:20 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:20 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:20 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:21 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:21 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:21 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:22 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:22 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:23 PM:
yeah agreed

Miller, Gregory 3:23 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:23 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 3:24 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 3:24 PM:

right

Jacobs, Brittany 3:24 PM:

**Ex. 5 Deliberative Process (DP)**

Miller, Gregory 3:24 PM:

that too

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/2/2020 5:39:29 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 1:22 PM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 1:23 PM:
I haven't gotten there yet

Jacobs, Brittany 1:23 PM:
I'm summarizing now for Jamie

Miller, Gregory 1:23 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 1:23 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 1:25 PM:
oh weird

Miller, Gregory 1:25 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 1:25 PM:
that's strange especially considering the toxicokinetic differences

Jacobs, Brittany 1:26 PM:
btwn PFOA and GenX

Miller, Gregory 1:26 PM:
yup

Miller, Gregory 1:27 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 1:27 PM:
not good lol

Miller, Gregory 1:29 PM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 1:29 PM:
presuming there's a d-r

Jacobs, Brittany 1:32 PM:
right I did see that

Jacobs, Brittany 1:32 PM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 1:33 PM:
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Miller, Gregory 1:33 PM:
3 doses plus control have the better potential to work in BMD software

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for sure

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this paper hasn't gone through NTP or EPA review yet

Jacobs, Brittany 1:34 PM:
so it's not close to being submitted to a journal

Miller, Gregory 1:34 PM:
yeah. we should red flag that last slide if we have a chance

Jacobs, Brittany 1:34 PM:
I will include it in this summary I'm writing up

Jacobs, Brittany 1:35 PM:
it's a lot of data here so I'm taking my time

Miller, Gregory 1:35 PM:
yeah. no pressure coming from me

Miller, Gregory 1:35 PM:
i'm giving up on all of these deadlines

Jacobs, Brittany 1:35 PM:
yeah just from Jamie lol

Miller, Gregory 1:35 PM:
i don't care anymore

Jacobs, Brittany 1:35 PM:
lol same

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/2/2020 6:03:07 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Miller, Gregory

Miller, Gregory 1:22 PM:

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i don't care anymore

Jacobs, Brittany 1:35 PM:
lol same

Jacobs, Brittany 1:42 PM:
**Ex. 5 Deliberative Process (DP)**

Jacobs, Brittany 1:42 PM:
changes persisted through the end of the study

Jacobs, Brittany 1:42 PM:
signficant change in all dose groups

Miller, Gregory 1:44 PM:
i'm reading it as significant change in 3 highest dose groups: 1, 2, 10

Jacobs, Brittany 1:44 PM:
yes sorry, this part seems to have different dose groups

Miller, Gregory 1:44 PM:
k

Jacobs, Brittany 1:45 PM:
they have 4 in that part

Miller, Gregory 1:45 PM:
yeah. plus it's kind of tiny in the slides

Miller, Gregory 1:45 PM:
i think slid 18 and 31 are the same data

Jacobs, Brittany 1:54 PM:

I don't think she presented that last slide

Jacobs, Brittany 1:54 PM:
looks like the presentation ended on slide 25

Miller, Gregory 1:54 PM:
good

Jacobs, Brittany 1:54 PM:
I'll ask her to make sure

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/2/2020 5:54:08 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Miller, Gregory

Miller, Gregory 1:22 PM:

Ex. 5 Deliberative Process (DP)

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yeah. no pressure coming from me

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yeah just from Jamie lol

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i don't care anymore

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they have 4 in that part

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**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/2/2020 6:23:26 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Lee, Janice [Lee.JaniceS@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Miller, Gregory

Miller, Gregory 1:22 PM:

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Ex. 5 Deliberative Process (DP)

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oh weird

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actually i don't know what the hell they're doing

Jacobs, Brittany 1:25 PM:
that's strange especially considering the toxicokinetic differences

Jacobs, Brittany 1:26 PM:
btwn PFOA and GenX

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yup

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Jacobs, Brittany 1:54 PM:
looks like the presentation ended on slide 25

Miller, Gregory 1:54 PM:
good

Jacobs, Brittany 1:54 PM:
I'll ask her to make sure

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/17/2020 2:38:45 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 10:07 AM:

i'm trying to send the Dose-Response section 7 to the group on the call. i can't figure out how to do it in word. what's the secret?

Miller, Gregory 10:15 AM:
nevermind. i just cut/pasted and reset the number to start at 7.0.

Jacobs, Brittany 10:23 AM:
sorry for the delay...glad you figured it out

Jacobs, Brittany 10:23 AM:
what did they decide to do with PFBA?

Miller, Gregory 10:25 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 10:25 AM:
i think mostly that they weren't sufficiently clear in the meeting they held last week

Miller, Gregory 10:25 AM:
fingers crossed this isn't a big deal

Miller, Gregory 10:26 AM:
but samantha is going to look at our GenX UFd and it sounds like she's going to have some suggestions

Miller, Gregory 10:26 AM:
we also said we'd share the DR section with them

Miller, Gregory 10:27 AM:
so there's a potential for more edits. but we'd be sharing it with these guys during agency review anyway so no big deal if we do their edits now vs later

Miller, Gregory 10:28 AM:
Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 10:29 AM:
oh okay, well that's good news

Miller, Gregory 10:29 AM:
(:

Jacobs, Brittany 10:29 AM:
yeah I hopped on there at the end and was like uh oh lol

Jacobs, Brittany 10:29 AM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 10:29 AM:

right. so just have to wait an see her comments.

Jacobs, Brittany 10:29 AM:
but maybe as written she could see a case for either

Jacobs, Brittany 10:29 AM:
right

Miller, Gregory 10:30 AM:
we've already done all that we know how to do to make our case. fresh eyes might help

Jacobs, Brittany 10:30 AM:
yeah I'm fine for getting ORD edits now and dealing with them now

Jacobs, Brittany 10:30 AM:
right, agreed

Jacobs, Brittany 10:30 AM:
and the DB is hard, Jason's feedback was basically, this is perfect

Miller, Gregory 10:31 AM:
right. everybody's opinion is going to differ

Miller, Gregory 10:31 AM:
we're going to be fighting UFd until the thing goes final

Jacobs, Brittany 10:31 AM:
yeah, I guess the more opinions we get then we will have a majority one way or the other (hopefully)

Jacobs, Brittany 10:31 AM:
and can use that to bolster our argument

Miller, Gregory 10:32 AM:
that's a logical point. but it won't matter to the people in high places

Miller, Gregory 10:32 AM:
because they always know best

Jacobs, Brittany 10:32 AM:
right right

Jacobs, Brittany 10:32 AM:
it's so annoying dealing with all of the egos

Miller, Gregory 10:33 AM:
yup.

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/24/2020 3:58:31 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 8:59 AM:

ok. here's a question i should have asked a long time ago. is genx long chain or short chain? I don't think we actually classify it either way. our Section 1.2 defines long chain as 6 or more carbons. GenX has 6 carbons but they're not all in a row. asking because PFBA UFd cites other short chain PFAS in their rationale. I was thinking GenX was short chain but maybe i'm wrong?

Jacobs, Brittany 8:59 AM:
Yeah, I'm not sure

Miller, Gregory 8:59 AM:
the half life makes it act more like a short chain than long chain

Jacobs, Brittany 8:59 AM:
I'm not sure if they are considered long chain if they aren't in a row

Miller, Gregory 9:00 AM:
this just isn't easy is it

Jacobs, Brittany 9:03 AM:
I thought they were considered short chain, but let me check some intro's to some papers and see if I can get a citation for it

Jacobs, Brittany 9:03 AM:
I think they need to be in a row

Miller, Gregory 9:03 AM:
it would be better on the PFBA UFd front if it wasn't short chain

Jacobs, Brittany 9:10 AM:
it only has 5 fluorinated carbons

Miller, Gregory 9:19 AM:
so it is short chain by our definition. but not as short as the 4 chain PFAS cited in PFBA's UFd

Miller, Gregory 11:39 AM:
weird about the econ center. epa already has and economic center for excellence. i used to work there

Miller, Gregory 11:39 AM:
whatever. doesn't affect us

Jacobs, Brittany 11:39 AM:
i guess they want another one for OW?

Jacobs, Brittany 11:39 AM:
yeah I'm tuning out for this

Jacobs, Brittany 11:40 AM:
perhaps it's an easier way to control the economists if the regulations you were talking about yesterday go through

Miller, Gregory 11:40 AM:
it's going to be confusing to have 2 centers. NCEE was always really protective of the title "center" in the name

Miller, Gregory 11:40 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 11:41 AM:

# Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 11:52 AM:

lolol, that's funny

Jacobs, Brittany 11:52 AM:

Ex. 5 Deliberative Process (DP)

Miller, Gregory 11:56 AM:

right.

Message

**From:** Miller, Gregory [miller.gregory@epa.gov]
**Sent:** 9/24/2020 3:53:20 PM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

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lolol, that's funny

Jacobs, Brittany 11:52 AM:

Ex. 5 Deliberative Process (DP)

Message

**From:** Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent:** 10/15/2020 11:17:43 AM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject:** Conversation with Jacobs, Brittany

Miller, Gregory 3:13 PM:

don't forget Bevin is at EPA now. she might have thoughts to share too

Jacobs, Brittany 3:13 PM:
ohhh very good point

Jacobs, Brittany 3:14 PM:
since their comments have a lot to do with her paper, I think it would be good to have her review it once we get through

Miller, Gregory 3:14 PM:
yup

Miller, Gregory 3:14 PM:
i'll im jamie about it

Jacobs, Brittany 3:14 PM:
sounds good, glad you thought of that!

Miller, Gregory 3:16 PM:
jamie's not so sure. let's let her stew on it for a while

Jacobs, Brittany 3:17 PM:
okay

Jacobs, Brittany 3:17 PM:
I wonder if Deborah looked at this memo

Jacobs, Brittany 7:01 AM:
Ex. 5 Deliberative Process (DP)

Miller, Gregory 7:02 AM:
yeah

Jacobs, Brittany 7:02 AM:
both ORD and to some extent OPPT have brought up similar points around the blake data and the placental lesions

Miller, Gregory 7:02 AM:
i'm fine with that given all of this crap

Jacobs, Brittany 7:03 AM:
yeah, I think me you and Jamie need to meet this morning to get on the same page before talking to Deborah

Miller, Gregory 7:05 AM:
i have a general at 8. i'll see if Jamie wants to use it to talk GenX before deborah's meeting

Jacobs, Brittany 7:05 AM:
okay sounds good

Message

**From**: Jacobs, Brittany [jacobs.brittany@epa.gov]
**Sent**: 10/15/2020 5:38:22 PM
**To**: Jacobs, Brittany [jacobs.brittany@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]
**Subject**: Conversation with Jacobs, Brittany

Jacobs, Brittany 1:22 PM:

there's a version of GenX with Joyce comments?

Miller, Gregory 1:22 PM:

Ex. 5 Deliberative Process (DP)t. you weren't on that email?

Jacobs, Brittany 1:23 PM:

I could have been but I have been getting a lot of emails recently

Miller, Gregory 1:23 PM:

i'm going to send her the 9/9 tech edited version with no ORD or Joyce comments. sound right? i still don't know what she's asking for. she want's the current draft

Jacobs, Brittany 1:24 PM:

I've been working on the one with ORD's comments

Jacobs, Brittany 1:24 PM:

been trying to make some edits to the language where it's easy to make the change

Jacobs, Brittany 1:24 PM:

I guess we could send both lol yeah I'm not sure what she is asking for either

Miller, Gregory 1:25 PM:

Ex. 5 Deliberative Process (DP)

Jacobs, Brittany 1:25 PM:

I'm really not sure

Jacobs, Brittany 1:26 PM:

did Joyce respond to ORD's comments?

Miller, Gregory 1:26 PM:

hold on. let me dig

Message

**From:** Miller, GregoryG [Miller.Gregory@epa.gov]
**Sent:** 10/27/2021 11:54:27 AM
**To:** Jacobs, Brittany [jacobs.brittany@epa.gov]

i really dont' want to ask this question but.. **Ex. 5 Deliberative Process (DP)**

Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 4/22/2021 2:43:10 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]
**CC**: Thayer, Kris [thayer.kris@epa.gov]; Kraft, Andrew [Kraft.Andrew@epa.gov]; Shirke, Avanti [shirke.avanti@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]

**Subject**: Monthly PFAS toxicity assessment Meeting
**Attachments**: Untitled Attachment; Monthly Meeting on PFAS toxicity assessments; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 5/5/2021 1:00:00 PM
**End**: 5/5/2021 2:00:00 PM
**Show Time As**: Busy

**Recurrence**: Monthly
the first Wednesday of every 1 month(s) from 9:00 AM to 10:00 AM
**Required Attendees**: Behl, Betsy; Jones, Samantha; Miller, GregoryG; Jacobs, Brittany; Lambert, Jason; Owens, Beth; Lavoie, Emma; Euling, Susan
**Optional Attendees**: Thayer, Kris; Kraft, Andrew; Shirke, Avanti; Strong, Jamie

---

# Microsoft Teams meeting

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---

Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 4/22/2021 2:43:10 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]
**CC**: Thayer, Kris [thayer.kris@epa.gov]; Kraft, Andrew [Kraft.Andrew@epa.gov]; Shirke, Avanti [shirke.avanti@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]

**Subject**: Monthly PFAS toxicity assessment Meeting
**Attachments**: Untitled Attachment; Monthly Meeting on PFAS toxicity assessments; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 5/5/2021 1:00:00 PM
**End**: 5/5/2021 2:00:00 PM
**Show Time As**: Busy

**Recurrence**: Monthly
the first Wednesday of every 1 month(s) from 9:00 AM to 10:00 AM
**Required Attendees**: Behl, Betsy; Jones, Samantha; Miller, GregoryG; Jacobs, Brittany; Lambert, Jason; Owens, Beth; Lavoie, Emma; Euling, Susan
**Optional Attendees**: Thayer, Kris; Kraft, Andrew; Shirke, Avanti; Strong, Jamie

---

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---

Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 4/22/2021 2:43:10 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, GregoryG [Miller.Gregory@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Euling, Susan [Euling.Susan@epa.gov]
**CC**: Thayer, Kris [thayer.kris@epa.gov]; Kraft, Andrew [Kraft.Andrew@epa.gov]; Shirke, Avanti [shirke.avanti@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]

**Subject**: Monthly PFAS toxicity assessment Meeting
**Attachments**: Untitled Attachment; Monthly Meeting on PFAS toxicity assessments; Untitled Attachment; Untitled Attachment; Untitled Attachment; Untitled Attachment
**Location**: Microsoft Teams Meeting

**Start**: 5/5/2021 1:00:00 PM
**End**: 5/5/2021 2:00:00 PM
**Show Time As**: Busy

**Recurrence**: Monthly
the first Wednesday of every 1 month(s) from 9:00 AM to 10:00 AM
**Required Attendees**: Behl, Betsy; Jones, Samantha; Miller, GregoryG; Jacobs, Brittany; Lambert, Jason; Owens, Beth; Lavoie, Emma; Euling, Susan
**Optional Attendees**: Thayer, Kris; Kraft, Andrew; Shirke, Avanti; Strong, Jamie

---

# Microsoft Teams meeting

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Message

**From:** Blain, Robyn [Robyn.Blain@icf.com]
**Sent:** 9/7/2021 1:09:59 PM
**To:** Snow, Samantha [51380@icf.com]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**Subject:** RE: Chat about animal tox health outcome conclusions
**Attachments:** ATT00001.txt

Hi Sam,

**Ex. 5 Deliberative Process (DP)**

Thanks,
Robyn

---

**From:** Snow, Samantha <Samantha.Snow@icf.com>
**Sent:** Monday, September 6, 2021 2:19 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Blain, Robyn <Robyn.Blain@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

Hey Brittany and Robyn,

I went ahead and revised the cardio sections again. This include moving the information around as recommended by Robyn and including a new paragraph at the bottom that goes over the weight of evidence and "final" call for the CV system. I pulled some language from the PFOA HA that I think fits here nicely but the conclusion relies heavy on the mechanistic info we haven't integrated yet so this may not be the best spot for this paragraph. I look forward to your thoughts on this tomorrow!

Sam

SAMANTHA SNOW, PhD, DABT | Lead Toxicologist (she/her/hers)

+1.919.293.1636 direct
Ex. 6 Personal Privacy (PP) obile

icf.com | LinkedIn

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, September 3, 2021 12:31 PM
**To:** Blain, Robyn <Robyn.Blain@icf.com>; Snow, Samantha <Samantha.Snow@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

Great, I'll take a look at PFOS. Looking forward to discussing on Tuesday. Have a wonderful weekend!

**From:** Blain, Robyn <Robyn.Blain@icf.com>
**Sent:** Friday, September 3, 2021 12:26 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Snow, Samantha <51380@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

**Ex. 5 Deliberative Process (DP)**

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, September 3, 2021 12:23 PM
**To:** Blain, Robyn <Robyn.Blain@icf.com>; Snow, Samantha <Samantha.Snow@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

**Ex. 5 Deliberative Process (DP)**

**From:** Blain, Robyn <Robyn.Blain@icf.com>
**Sent:** Friday, September 3, 2021 12:15 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Snow, Samantha <51380@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

**Ex. 5 Deliberative Process (DP)**

I think it is something we should definitely discuss on Tuesday.

I hope you have a nice weekend.

Thanks,
Robyn

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Friday, September 3, 2021 11:29 AM
**To:** Blain, Robyn <Robyn.Blain@icf.com>; Snow, Samantha <Samantha.Snow@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

Hi Robyn,

Ex. 5 Deliberative Process (DP)

I think this info will be moved later on into the integration/dose-response sections, but for the reasons I mention above, I'd like us to start writing up what we can based on the info we have now.

Let me know your thoughts!

Britt

**From:** Blain, Robyn <Robyn.Blain@icf.com>
**Sent:** Friday, September 3, 2021 10:18 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Snow, Samantha <51380@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

Hi Brittany,

Here is the opening paragraph for the PFOS hepatic section. This sounds like what we are interested in for the summary at the end.

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks,
Robyn

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Thursday, September 2, 2021 4:14 PM
**To:** Snow, Samantha <Samantha.Snow@icf.com>; Blain, Robyn <Robyn.Blain@icf.com>; Soares, Barbara <soares.barbara@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

Hi Robyn,

I wanted to send along a publication and some language we used in GenX to describe how we categorize liver effects as adverse. This will be the lens that I'm looking through while evaluating the hepatic data.

Britt

From GenX:
Because liver effects such as increases in liver weight and hepatocellular hypertrophy (also referenced here as cytoplasmic alteration per NTP PWG's review) can be associated with activation of cellular PPARα receptors, EPA evaluated observed liver effects resulting from HFPO dimer acid ammonium salt exposure against the Hall criteria (Hall et al., 2012). These criteria indicate that increased liver weight and hepatocellular hypertrophy must be accompanied by histologic or clinical pathology indicative of liver toxicity to be considered adverse. Histologic or clinical pathology indicative of liver toxicity can include changes in liver enzyme concentrations in the serum, necrosis, inflammation, and degeneration. With these criteria in mind, EPA concluded that some of the observed liver effects such as single-cell and focal necrosis, increased apoptosis, and increases in serum liver enzymes indicate toxicity of relevance to humans as opposed to PPARα activation unique to rodents.

---

**From:** Snow, Samantha <Samantha.Snow@icf.com>
**Sent:** Wednesday, September 1, 2021 11:59 AM
**To:** Blain, Robyn <13866@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Chat about animal tox health outcome conclusions

Notes from today

**Animal tox health outcome conclusion discussion (9/1/21)**
Attendees: Brittany, Robyn, Barbara, Sam

- Ex. 5 Deliberative Process (DP)
-

Ex. 5 Deliberative Process (DP)

SAMANTHA SNOW, PhD, DABT | Lead Toxicologist (she/her/hers)

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-----Original Appointment-----
**From:** Snow, Samantha
**Sent:** Wednesday, September 1, 2021 7:48 AM
**To:** Snow, Samantha; Blain, Robyn; Soares, Barbara; Jacobs, Brittany
**Subject:** Chat about animal tox health outcome conclusions

**When:** Wednesday, September 1, 2021 11:30 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

---

# Microsoft Teams meeting

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---

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 9/5/2019 6:39:00 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]
**Subject**: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

I cannot attend this meeting due to a conflict with the WQSMA meeting. Please feel free to have it in my absence, or let me know if you want to cancel

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Appointment

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 10/23/2019 3:37:34 PM
**To**: Soares, Barbara [soares.barbara@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Snow, Samantha [Samantha.Snow@icf.com]

**Subject**: HECD WA 3-17 New GenX TD
**Location**: Skype Meeting

**Start**: 10/29/2019 5:00:00 PM
**End**: 10/29/2019 6:00:00 PM
**Show Time As**: Tentative

**Recurrence**: (none)

---

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English (United States)
English (United Kingdom)
English (United Kingdom)

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Conference ID: Ex. 6 Personal Privacy (PP)
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---

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 10/16/2019 12:20:32 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

No problem. that works me for as well.

---

**From:** Jones, Samantha <Jones.Samantha@epa.gov>
**Sent:** Wednesday, October 16, 2019 7:54 AM
**To:** Lavoie, Emma <Lavoie.Emma@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Hi,

Wanted to see if we could cancel for today? I have a conflict and Beth and Jason are crunching on PFBS. Nothing new to report but would be good to catch up next week.

Thanks!
Samantha

**Finalizing GenX and PFBS assessments: call in** Ex. 6 Personal Privacy (PP)
Scheduled: Wednesday, Oct 16, 2019 from 9:00 AM to 10:00 AM
Location: DCRoomWest5231M/DC-CCW-OST
Invitees: Lavoie, Emma, Jacobs, Brittany, Bahadori, Tina, Soares, Barbara, Miller, Gregory, Flaherty, Colleen, Behl, Betsy, Owens, Beth, Lambert, Jason, Strong, Jamie

Sent from my iPhone

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 11/6/2019 1:31:03 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Lavoie, Emma [Lavoie.Emma@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Bahadori, Tina [Bahadori.Tina@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Flaherty, Colleen [Flaherty.Colleen@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Owens, Beth [Owens.Beth@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Maybe just a quick meeting?

---

**From:** Jones, Samantha <Jones.Samantha@epa.gov>
**Sent:** Wednesday, November 06, 2019 8:16 AM
**To:** Lavoie, Emma <Lavoie.Emma@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Bahadori, Tina <Bahadori.Tina@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Flaherty, Colleen <Flaherty.Colleen@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Hi all,

Do we need to meet today? We don't have any updates, ORD side.

Samantha

**Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)**
Scheduled: Wednesday, Nov 6, 2019 from 9:00 AM to 10:00 AM
Location: DCRoomWest5231M/DC-CCW-OST
Invitees: Lavoie, Emma, Jacobs, Brittany, Bahadori, Tina, Soares, Barbara, Flaherty, Colleen, Miller, Gregory, Behl, Betsy, Owens, Beth, Lambert, Jason, Strong, Jamie

Sent from my iPhone

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 2/5/2020 2:02:15 PM
**To**: Owens, Beth [Owens.Beth@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Done. enjoy the gift of time

---

**From:** Owens, Beth <Owens.Beth@epa.gov>
**Sent:** Wednesday, February 05, 2020 8:59 AM
**To:** Jones, Samantha <Jones.Samantha@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Hi-

Jason and I don't have anything of note to share. We're still updating based on TWG comments, preparing for external peer review.

Should we cancel?

Beth

---

**From:** Jones, Samantha <Jones.Samantha@epa.gov>
**Sent:** Wednesday, February 5, 2020 8:56 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Behl, Betsy <Behl.Betsy@epa.gov>; Owens, Beth <Owens.Beth@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Hi all, my apologies for a late notice, I'm dealing with an apartment issue and will not be able to call in today. I don't have anything from my end.

Hope you all are doing well and hanging in there!

**Finalizing GenX and PFBS assessments: call in** Ex. 6 Personal Privacy (PP)
Scheduled: Wednesday, Feb 5, 2020 from 9:00 AM to 10:00 AM
Location: DCRoomWest5231M/DC-CCW-OST
Invitees: Jacobs, Brittany, Soares, Barbara, Miller, Gregory, Behl, Betsy, Owens, Beth, Lambert, Jason, Strong, Jamie

Sent from my iPhone

Message

**From**: Jones, Samantha [Jones.Samantha@epa.gov]
**Sent**: 3/24/2020 6:58:59 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Sounds fine. ☺

Samantha J. Jones, PhD
Associate Director, Center for Public Health and Environmental Assessment (CPHEA)
National Program Director, Health and Environmental Risk Assessment (HERA) Research Program
Office of Research and Development (ORD)
US Environmental Protection Agency (EPA)
RRB 71210, Washington, DC
(o) 202-564-6794; (m) 703-943-7990

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Tuesday, March 24, 2020 2:52 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Cancel for tomorrow??

Elizabeth (Betsy) Behl, Director
Health and Ecological Criteria Division, 4304-T
Office of Science and Technology, Office of Water
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington DC 20460

phone: 202.566.0788
room 5233H

Message

**From**: Williams, Ashlei [Williams.Ashlei@epa.gov]
**Sent**: 8/4/2020 1:47:23 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)

Hello Everyone,

I am just sending this message to inform you that Samantha is taking leave this week and will not be able to attend. Thanks and take care.

Best,
Ashlei Williams

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, February 6, 2019 4:15 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**When:** Wednesday, August 5, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** skype meeting

---

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Appointment

**From**: Snowden, Belinda [snowden.belinda@epa.gov]
**Sent**: 8/10/2020 12:07:31 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Canceled: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**Location**: skype meeting

**Start**: 8/12/2020 1:00:00 PM
**End**: 8/12/2020 2:00:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees**: Owens, Beth

---

## Join Skype Meeting

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Toll number: + Ex. 6 Personal Privacy (PP) Dial-in Number) English (United States)
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Conference ID: 1239896
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---

Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 8/4/2020 9:51:27 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Canceled: Finalizing GenX and PFBS assessments: call in Ex. 6 Personal Privacy (PP)
**Location**: skype meeting

**Start**: 8/5/2020 1:00:00 PM
**End**: 8/5/2020 2:00:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees**: Owens, Beth

Enjoy the time

---

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---

Message

**From**: Owens, Beth [Owens.Beth@epa.gov]
**Sent**: 8/25/2020 4:38:01 PM
**To**: Williams, Ashlei [Williams.Ashlei@epa.gov]; Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments

Jason and I too, actually. Could we cancel tomorrow perhaps?

---

**From:** Williams, Ashlei <Williams.Ashlei@epa.gov>
**Sent:** Tuesday, August 25, 2020 12:36 PM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments

Hello Everyone,

Samantha wanted me to inform you that she will not be able to attend this meeting because she has a workshop to attend.

Best,
-Ashlei

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 12, 2020 1:09 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments
**When:** Wednesday, August 26, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

New Teams meeting

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---

Message

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 9/21/2020 12:52:18 PM
**To**: Jones, Samantha [Jones.Samantha@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments

Sounds great.

---

**From:** Jones, Samantha <Jones.Samantha@epa.gov>
**Sent:** Monday, September 21, 2020 8:43 AM
**To:** Behl, Betsy <Behl.Betsy@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments

We hope to hear back from the PFAS TWG by COB today whether there are any further comments from DOD on PFBS. We'll give you an update if there are.

Samantha

**Samantha J. Jones, PhD**
**Associate Director, Center for Public Health and Environmental Assessment (CPHEA)**
**National Program Director, Health and Environmental Risk Assessment (HERA) Research Program**
Office of Research and Development (ORD)
US Environmental Protection Agency (EPA)
RRB 71210, Washington, DC
(o) 202-564-6794; (m) 703-943-7990

---

**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Monday, September 21, 2020 8:19 AM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Jones, Samantha <Jones.Samantha@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>; Jacobs, Brittany <jacobs.brittany@epa.gov>; Lambert, Jason <Lambert.Jason@epa.gov>; Soares, Barbara <soares.barbara@epa.gov>; Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Owens, Beth <Owens.Beth@epa.gov>
**Subject:** RE: Finalizing GenX and PFBS assessments

Meet or cancel?

-----Original Appointment-----
**From:** Snowden, Belinda **On Behalf Of** Behl, Betsy
**Sent:** Wednesday, August 12, 2020 1:09 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara; Strong, Jamie
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments
**When:** Wednesday, September 23, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

New Teams meeting

---

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Appointment

**From**: Behl, Betsy [Behl.Betsy@epa.gov]
**Sent**: 9/22/2020 10:11:57 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Canceled: Finalizing GenX and PFBS assessments
**Location**: Microsoft Teams Meeting

**Start**: 9/23/2020 1:00:00 PM
**End**: 9/23/2020 2:00:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees**: Owens, Beth

New Teams meeting

---

## Join Microsoft Teams Meeting

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---

Appointment

**From**: Snowden, Belinda [snowden.belinda@epa.gov]
**Sent**: 10/6/2020 12:10:53 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Canceled: Finalizing GenX and PFBS assessments
**Location**: Microsoft Teams Meeting

**Start**: 10/7/2020 1:00:00 PM
**End**: 10/7/2020 2:00:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees**: Owens, Beth

New Teams meeting

---

## Join Microsoft Teams Meeting

es, Washington DC (Toll)

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---

Message

**From**: Williams, Ashlei [Williams.Ashlei@epa.gov]
**Sent**: 10/29/2020 12:32:27 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments

Hi Everyone,

Samantha will be out on annual leave for two weeks starting November 2nd and will be unable to attend this meeting. If there is any information that you feel she needs to know, please email her and cc me. I will add it to her planner to ensure that she receives the information.

Thanks,
Ashlei

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 12, 2020 1:09 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments
**When:** Wednesday, November 4, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

New Teams meeting

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Appointment

**From**: Snowden, Belinda [snowden.belinda@epa.gov]
**Sent**: 11/2/2020 3:11:04 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Canceled: Finalizing GenX and PFBS assessments
**Location**: Microsoft Teams Meeting

**Start**: 11/4/2020 2:00:00 PM
**End**: 11/4/2020 3:00:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees**: Owens, Beth

New Teams meeting

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Appointment

**From**: Snowden, Belinda [snowden.belinda@epa.gov]
**Sent**: 11/9/2020 9:26:44 PM
**To**: Strong, Jamie [Strong.Jamie@epa.gov]; Jones, Samantha [Jones.Samantha@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]

**Subject**: Canceled: Finalizing GenX and PFBS assessments
**Location**: Microsoft Teams Meeting

**Start**: 11/11/2020 2:00:00 PM
**End**: 11/11/2020 3:00:00 PM
**Show Time As**: Free

**Importance**: High

**Recurrence**: Weekly
every Wednesday from 9:00 AM to 10:00 AM
**Required Attendees**: Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Optional Attendees**: Owens, Beth

New Teams meeting

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Message

**From**: Jones, Samantha [Jones.Samantha@epa.gov]
**Sent**: 11/18/2020 1:42:38 PM
**To**: Behl, Betsy [Behl.Betsy@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]; Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Lambert, Jason [Lambert.Jason@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]
**CC**: Owens, Beth [Owens.Beth@epa.gov]
**Subject**: RE: Finalizing GenX and PFBS assessments

Hi all, I'm going to miss this morning's meeting. I'll catch up later.

Thanks,
SAmantha

Samantha J. Jones, PhD
**Associate Director, Center for Public Health and Environmental Assessment (CPHEA)**
**National Program Director, Health and Environmental Risk Assessment (HERA) Research Program**
Office of Research and Development (ORD)
US Environmental Protection Agency (EPA)
RRB 71210, Washington, DC
(o) 202-564-6794; (m) 703-943-7990

-----Original Appointment-----
**From:** Behl, Betsy <Behl.Betsy@epa.gov>
**Sent:** Wednesday, August 12, 2020 1:09 PM
**To:** Behl, Betsy; Strong, Jamie; Jones, Samantha; Miller, Gregory; Jacobs, Brittany; Lambert, Jason; Soares, Barbara
**Cc:** Owens, Beth
**Subject:** Finalizing GenX and PFBS assessments
**When:** Wednesday, November 18, 2020 9:00 AM-10:00 AM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Microsoft Teams Meeting

New Teams meeting

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---

Message

**From**: Jones, Kaedra [Kaedra.Jones@icf.com]
**Sent**: 10/29/2019 9:23:09 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Soares, Barbara [soares.barbara@epa.gov]; Snow, Samantha [Samantha.Snow@icf.com]
**Subject**: RE: HECD WA 3-17 New GenX TD
**Attachments**: HECD WA 3-16_TD-4_Scoping call notes_10.29.19.docx

Hi,

To echo Sam, thank you for a great call and for including us in this important GenX work!

I have attached notes from what I am calling today's "scoping" call. Please let me know if you have any questions or concerns with what we captured.

If TD-4 is sent, we will review and then reach out with any questions prior to submitting a TD plan.

Thanks,
Kaedra

Kaedra Jones
kaedra.jones@icf.com
614.702.2510

---

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, October 29, 2019 2:00 PM
**To:** Jones, Kaedra <Kaedra.Jones@icf.com>; Soares, Barbara <soares.barbara@epa.gov>; Snow, Samantha <Samantha.Snow@icf.com>
**Subject:** RE: HECD WA 3-17 New GenX TD

Hello,

As always, thanks for the great discussion in brainstorming TD-4. Attached for your reference is the OPPT systematic review including the lit search strategy that has been used for this assessment (Table A-2). After getting off of our call, I realized that I think we will need to run the literature search through HERO because we already have a HERO page set up for this assessment with all the available studies (including the tox studies from the chemical company). I will talk to Jamie tomorrow to confirm that I can reach out to HERO to ask them to update the literature search and send us a RIS file with the updated studies. Also attached is the full draft toxicity assessment for your reference. I will be in touch with updates and it was nice to meet you Sam!

All the best,
Brittany

-----Original Appointment-----
**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Wednesday, October 23, 2019 11:38 AM
**To:** Jones, Kaedra; Soares, Barbara; Jacobs, Brittany; Snow, Samantha
**Subject:** HECD WA 3-17 New GenX TD
**When:** Tuesday, October 29, 2019 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Skype Meeting

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CF) English (United Kingdom)
CF) English (United Kingdom)

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Message

**From:** Ingle, Brandall [Brandall.Ingle@icf.com]
**Sent:** 2/24/2020 3:04:49 PM
**To:** Jones, Kaedra [kaedra.jones@icf.com]; Snow, Samantha [Samantha.Snow@icf.com]; Soares, Barbara [soares.barbara@epa.gov]; Greene, Sophie [greene.sophie@epa.gov]; Jacobs, Brittany [Jacobs.Brittany@epa.gov]; Foster, Caroline [Caroline.Foster@icf.com]
**Subject:** RE: HECD WA 3-16 Check in
**Attachments:** ATT00001.txt

Attaching an agenda for today's meeting below.
---

TD-03: Rapid Systematic Review Pilot, Inactive

TD-04: GenX
- Waiting on lit search results from Brittany before moving forward

TD-05: Rapid Systematic Review Batch 1
- PDF retrieval complete
- Study Quality complete
- Extractions complete
- All deliverables sent on 2/21
    - Format of data pivots

TD-06: Rapid Systematic Review Batch 2
- PDF Retrieval
    - EPA ILL request for remaining 6 PDFs was submitted on 2/14
- Study Quality – starts this week
    - MeHg – In progress (still waiting on all PDFs to come in)
    - MTBE – In progress (still waiting on all PDFs to come in)
- Extraction
    - MeHg – In progress
    - MTBE – In progress
    - Anthraquinone and Tungsten sent on 2/21

TD-07: Rapid Systematic Review Batch 3
- PDF Retrieval
    - Will submit request for remaining 39 references this week
- Study Quality
    - Benzophenone – In progress (still waiting on all PDFs to come in)
    - 4-nonylphenol – In progress (still waiting on all PDFs to come in)
    - TCEP – In progress (still waiting on all PDFs to come in)
- Extraction
    - Benzophenone – In progress
    - 4-nonylphenol – In progress
    - TCEP – In progress

TD-08: Rapid Systematic Review Batch 4
- Title/Abstract Screening
    - Molybdenum – Complete
    - Tris(1,3-dichloro-2-propyl) phosphate (TDCP) – In Progress
    - Boron – In Progress

- **Question:** Are *borono phenylalanine* and *calcium fructoborate* acceptable compounds?

TD-10: Assist with the GenX Chemicals Systematic Review under WA 3-16; part 2

- ICF reviewing the TD and will reach out with any questions before submitting the TD plan
- Will provide a tentative budget this week

Other:

- Kaedra is out this week, but is available again on 3/2 for follow-up discussion about budget to complete rapid systematic review of remaining chemicals and TD-10. We will continue to work on existing TDs in the interim.

**BRANDALL INGLE, PhD** | Senior Associate | brandall.ingle@icf.com | icf.com
**ICF** | 2635 Meridian Parkway, Suite 200, Durham, NC, USA

-----Original Appointment-----
**From:** Jones, Kaedra <Kaedra.Jones@icf.com>
**Sent:** Monday, December 16, 2019 11:27 AM
**To:** Jones, Kaedra; Ingle, Brandall; Snow, Samantha; Soares, Barbara; greene.sophie@epa.gov
**Cc:** Frye, Jeremy
**Subject:** HECD WA 3-16 Check in
**When:** Monday, February 24, 2020 11:00 AM-12:00 PM (UTC-05:00) Eastern Time (US & Canada).
**Where:** Skype Meeting

TD-03: Rapid Systematic Review Pilot, Inactive

TD-04: GenX

- Waiting on lit search results from Brittany before moving forward

TD-05: Rapid Systematic Review Batch 1

- PDF retrieval complete
- Study Quality complete
- Extractions complete
- All deliverables sent on 2/21
    - Format of data pivots

TD-06: Rapid Systematic Review Batch 2

- PDF Retrieval
    - EPA ILL request for remaining 6 PDFs was submitted on 2/14
- Study Quality – starts this week
    - MeHg – In progress (still waiting on all PDFs to come in)
    - MTBE – In progress (still waiting on all PDFs to come in)
- Extraction
    - MeHg – In progress
    - MTBE – In progress
    - Anthraquinone and Tungsten sent on 2/21

TD-07: Rapid Systematic Review Batch 3

- PDF Retrieval
  - Will submit request for remaining 39 references this week
- Study Quality
  - Benzophenone – In progress (still waiting on all PDFs to come in)
  - 4-nonylphenol – In progress (still waiting on all PDFs to come in)
  - TCEP – In progress (still waiting on all PDFs to come in)
- Extraction
  - Benzophenone – In progress
  - 4-nonylphenol – In progress
  - TCEP – In progress

TD-08: Rapid Systematic Review Batch 4

- Title/Abstract Screening
  - Molybdenum – Complete
  - Tris(1,3-dichloro-2-propyl) phosphate (TDCP) – In Progress
  - Boron – In Progress
    - **Question:** Are *borono phenylalanine* and *calcium fructoborate* acceptable compounds?

TD-10: Assist with the GenX Chemicals Systematic Review under WA 3-16; part 2

- ICF reviewing the TD and will reach out with any questions before submitting the TD plan
- Will provide a tentative budget this week

Other:

- Kaedra is out this week, but is available again on 3/2 for follow-up discussion about budget to complete rapid systematic review of remaining chemicals and TD-10. We will continue to work on existing TDs in the interim.

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nglish (United States)
nglish (United Kingdom)
nglish (United Kingdom)

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Message

**From**: Strong, Jamie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EA753AAFEFB74C268550FE6A2C187838-BENEDICT, JAMIE]
**Sent**: 4/20/2020 11:59:19 AM
**To**: Fenton, Suzanne (NIH/NIEHS) [E] (suzanne.fenton@nih.gov) [suzanne.fenton@nih.gov]
**Subject**: Materials for Bevin/Sue to review
**Attachments**: Mode of Action_GenX Chemicals Assessment_4.20.20.docx; Blake et al 2020 Writeup.docx; Database uncertainty factor_4.20.20.docx

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

**Ex. 5 Deliberative Process (DP)**

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Message

**From**: Strong, Jamie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EA753AAFEFB74C268550FE6A2C187838-BENEDICT, JAMIE]
**Sent**: 4/27/2020 6:25:44 PM
**To**: Jacobs, Brittany [Jacobs.Brittany@epa.gov]
**Subject**: FW: Materials for Bevin/Sue to review

FYI

---

**From:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Sent:** Monday, April 27, 2020 2:21 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Materials for Bevin/Sue to review

Bevin and I compared notes last Friday and she was going to pull our comments together… I will check in with her. We will try to get it to you on Wedn. I have a couple of things I have to get done today and tomorrow.

Sue

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 27, 2020 1:28 PM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** RE: Materials for Bevin/Sue to review

Just checking in and making sure you don't have any questions related to what sent?

---

**From:** Strong, Jamie
**Sent:** Monday, April 20, 2020 7:59 AM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] (suzanne.fenton@nih.gov) <suzanne.fenton@nih.gov>
**Subject:** Materials for Bevin/Sue to review

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

**Ex. 5 Deliberative Process (DP)**

a 10 for this or?

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Message

**From**: Strong, Jamie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EA753AAFEFB74C268550FE6A2C187838-BENEDICT, JAMIE]
**Sent**: 4/27/2020 6:25:38 PM
**To**: Fenton, Suzanne (NIH/NIEHS) [E] [suzanne.fenton@nih.gov]
**Subject**: RE: Materials for Bevin/Sue to review

Awesome! Thank you again so much!

---

**From:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Sent:** Monday, April 27, 2020 2:21 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Materials for Bevin/Sue to review

Bevin and I compared notes last Friday and she was going to pull our comments together… I will check in with her. We will try to get it to you on Wedn. I have a couple of things I have to get done today and tomorrow.

Sue

---

**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 27, 2020 1:28 PM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** RE: Materials for Bevin/Sue to review

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---

**From:** Strong, Jamie
**Sent:** Monday, April 20, 2020 7:59 AM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] (suzanne.fenton@nih.gov) <suzanne.fenton@nih.gov>
**Subject:** Materials for Bevin/Sue to review

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

**Ex. 5 Deliberative Process (DP)**

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Message

**From**: Strong, Jamie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EA753AAFEFB74C268550FE6A2C187838-BENEDICT, JAMIE]
**Sent**: 4/29/2020 4:21:47 PM
**To**: Fenton, Suzanne (NIH/NIEHS) [E] [suzanne.fenton@nih.gov]
**Subject**: RE: Materials for Bevin/Sue to review

I understand. Thanks again.

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**From:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Sent:** Wednesday, April 29, 2020 12:18 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Subject:** RE: Materials for Bevin/Sue to review

Jamie, with all of the other stuff on our plates, Bevin and I are planning to get comments on all three documents to you on Monday 5/4 as early in the day as possible. I have two deadlines between now and Friday and she has one…

We both have comments for you and your team.

Sue

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**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 27, 2020 1:28 PM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** RE: Materials for Bevin/Sue to review

Just checking in and making sure you don't have any questions related to what sent?

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**From:** Strong, Jamie
**Sent:** Monday, April 20, 2020 7:59 AM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] (suzanne.fenton@nih.gov) <suzanne.fenton@nih.gov>
**Subject:** Materials for Bevin/Sue to review

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

**Ex. 5 Deliberative Process (DP)**

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Message

**From**: Strong, Jamie [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=EA753AAFEFB74C268550FE6A2C187838-BENEDICT, JAMIE]
**Sent**: 5/7/2020 3:52:58 PM
**To**: Fenton, Suzanne (NIH/NIEHS) [E] [suzanne.fenton@nih.gov]
**CC**: Blake, Bevin (NIH/NIEHS) [F] [bevin.blake@nih.gov]
**Subject**: RE: Materials for review

Many thanks to you and Bevin. We really appreciate you taking the time to do this for us. I will let you know if we have any questions.

Best,
Jamie

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**From:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Sent:** Wednesday, May 06, 2020 9:39 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>
**Cc:** Blake, Bevin (NIH/NIEHS) [F] <bevin.blake@nih.gov>
**Subject:** RE: Materials for review

Hi Jamie,

**Ex. 5 Deliberative Process (DP)**

Thank you for letting us comment – this was fun and we have manuscripts drafted and nearly ready for clearance to help with the mechanism in liver, mammary gland, and placenta. I hope you find our comments helpful.

All the best,
Sue

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**From:** Strong, Jamie <Strong.Jamie@epa.gov>
**Sent:** Monday, April 20, 2020 7:59 AM
**To:** Fenton, Suzanne (NIH/NIEHS) [E] <suzanne.fenton@nih.gov>
**Subject:** Materials for Bevin/Sue to review

Good Morning Sue,

Hope you are doing well and staying healthy!

Attached are few sections of the updated GenX chemicals toxicity assessment for your review.

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

Thanks again for being willing to review parts of our updated GenX chemicals assessment, we really appreciate the help. Let us know if you have any questions. Thank you again, we really appreciate this!

All the best,

Jamie

Appointment

**From:** Miller, Gregory [Miller.Gregory@epa.gov]
**Sent:** 2/21/2020 2:10:48 PM
**To:** Miller, Gregory [Miller.Gregory@epa.gov]; Jacobs, Brittany [jacobs.brittany@epa.gov]; Brinkerhoff, Chris [Brinkerhoff.Chris@epa.gov]; Strong, Jamie [Strong.Jamie@epa.gov]

**Subject:** Discuss BMD modeling for the Bevin Blake and Sue Fenton Paper
**Location:** DCRoomWest5233AA/DC-CCW-OST

**Start:** 2/25/2020 4:00:00 PM
**End:** 2/25/2020 4:30:00 PM
**Show Time As:** Busy

**Required Attendees:** Jacobs, Brittany; Brinkerhoff, Chris; Strong, Jamie

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**From:** Brinkerhoff, Chris
**Sent:** Thursday, February 20, 2020 6:09 PM
**To:** Miller, Gregory; Jacobs, Brittany
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper
**Attachments:** Blake Gestation Weight Gain % from ED 0.5 to necropsy Table S5 output.xlsx; Gestational Weight Gain - DuPont 18405 1037 F0 females Table S10_analysis.xlsx

Yes. Maybe a time on Tues 25th or Wed 26th? My schedule is wide open these days. Pick a time that works for you.

**Ex. 5 Deliberative Process (DP)**

Chris

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 18, 2020 2:11 PM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

Just checking in. Should I schedule some time to talk? When would be good for you?

Hope you had a nice long weekend!

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Tuesday, February 11, 2020 12:38 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Developmental Repro Study attached. The gestational weight gain table is table S10 on page 80 of the PDF. Thanks so much!!

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 11, 2020 7:35 AM
**To:** Jacobs, Brittany <jacobs.brittany@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I ran a few models. I think we can get something useable out of it, but a few questions first.

**Ex. 5 Deliberative Process (DP)**

# Ex. 5 Deliberative Process (DP)

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, February 05, 2020 7:55 AM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Thanks Chris! Excited to get your input on the paper!

**From:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Sent:** Tuesday, February 04, 2020 5:45 PM
**To:** Miller, Gregory <Miller.Gregory@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** RE: Quick snapshot of the Bevin Blake and Sue Fenton Paper

I'm happy to take a look. At first glance it seems straight forward. Let me take a little time with it otherwise I'll probably forget stuff to collect thoughts and we meet Tuesday.

p.s. Brittany, welcome back from Ex. 6 Personal Privacy (PP)

**From:** Miller, Gregory <Miller.Gregory@epa.gov>
**Sent:** Tuesday, February 04, 2020 3:27 PM
**To:** Brinkerhoff, Chris <Brinkerhoff.Chris@epa.gov>
**Cc:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Subject:** FW: Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hey Chris,

Attached is the paper we'd like to get your input on. We're specifically interested in your thoughts about whether it might be possible to model the increase in gestation weight gain and/or incidence of placental lesions. It's a two dose plus control study. Brittany put together a quick summary of the important points from the paper (below). When you're ready, lets set up a time to talk. Brittany is back part time from Ex. 6 Personal Privacy (PP) and is in the office on Tuesday and Wednesday each week. Think you could be ready to give us your thoughts by next Tuesday (unless you're a speed-reader and want to talk tomorrow)?

Greg

**From:** Jacobs, Brittany <jacobs.brittany@epa.gov>
**Sent:** Wednesday, January 29, 2020 12:06 PM
**To:** Strong, Jamie <Strong.Jamie@epa.gov>; Miller, Gregory <Miller.Gregory@epa.gov>
**Subject:** Quick snapshot of the Bevin Blake and Sue Fenton Paper

Hi,

I've spent some time going over Bevin's paper and wanted to highlight some of the main takeaways so we can discuss. I think we maybe could model the increase in gestation weight gain or incidence of placental lesions. At the very least, this paper shows repro/developmental effects at the lowest GenX dose administered and should be incorporated in the database uncertainty factor discussion.

Britt

Blake et al 2019 "Evaluation of maternal, embryo, and placental effects in CD-1 mice following gestational exposure to PFOA or GenX"

**Background Information**

- Pregnant dams were dosed from embryonic day 1.5 to embryonic day 11.5 or 17.5 with either deionized water (control), 1 mg/kg-day PFOA, 5 mg/kg-day PFOA, 2 mg/kg-day HFPO-DA or 10 mg/kg-day HFPO-DA
    - Embryonic day 11.5 selected because the placenta hasn't fully matured. This is a critical period where the placenta undergoes vascularization with the uterine wall and chorioallantoic branching of vessels (I believe this leads to the formation of the placental labyrinth).
    - Placenta has fully matured by embryonic day 17.5.
        - As an FYI, the normal gestational period for a mouse is ~ 20 days
- Susan Elmore conducted the pathology review. They also conducted transmission electron microscopy (TEM) on the liver and placenta.

**Biggest takeaways for me**:

- "We demonstrate adverse systemic toxicity of dams exposed to 2 mg/kg-day HFPO-DA [lowest dose in the study] including microscopic alterations in the liver, higher Gestational Weight Gain, and higher incidence of placental lesions."
    - Liver lesions in the dam (Table S6): increases in cytoplasmic alteration, mitotic figures, cell death (included both apoptosis and single cell necrosis), focal necrosis
        - Generally, these effects exhibited a dose response and got worse over the dosing period
        - Saw these effects after just 10 or 16 days of dosing
        - Sample size was pretty small (N = 5)
    - Higher gestation weight gain at embryonic day 17.5 (Figure 3B): significantly different at 2 mg/kg-day and 10 mg/kg-day (exhibits dose-response)
        - only significantly different at 2mg/kg-day using mixed effect models adjusting for repeated measures of relative GWG, litter size, and gestational day
    - Placental lesions at embryonic day 17.5 (Table S10):labyrinth atrophy, labyrinth congestion, early fibrin clot
        - Constellation of lesions exhibited a dose response
        - Constellation of lesions was significantly different from control group at 2 and 10 mg/kg-day when evaluated per litter
- Their TEM findings support "potential mechanisms of PFAS-induced hepatic toxicity other than peroxisome proliferating receptor (PPAR) and demonstrate this for the first time with GenX"
    - Need to follow up with Sue about this. I'm not exactly which other pathways are supported by the TEM results, and they don't elaborate in the paper
- Internal dosimetry measurements are included in this paper (Table S2 and S3). The amount of GenX in the liver is MUCH lower as compared to PFOA even though the dose of GenX is doubled.