AN ACT establishing a commission to investigate and analyze the environmental and health impacts relating to releases of perfluorinated chemicals in the air, soil, and groundwater in Merrimack, Bedford and Litchfield.

HB737, Chapter 335:1, RSA Chapter 126-A: 79-a, Laws of 2019

Meeting

MINUTES

Friday, February 12, 2021, 10 AM, Virtual Meeting

Attendees: Joseph Ayotte (USGS), Chris Bandazian (Town of Bedford), Dr. Kathleen Bush (NHDHHS), Sen. Sharon Carson, Rep. Jackie Chretien, Amy Costello (UNH Institute for Health Policy and Practice), Sen. Gary Daniels, Nicole Fordey (Litchfield resident), Nancy Harrington (Town of Merrimack), Rep. Bob Healey, Hon. Mindi Messmer (environmental advocate), Hon. Nancy Murphy (Merrimack resident), Rep. Rosemarie Rung, Michael Wimsatt (NHDES)

Guests: Amy Rousseau (NHDES, attended to provide technical support), Sarita Croce (Assistant Department of Public Works/Wastewater Town of Merrimack), Joanna Tourangeau (Lawyer Town of Merrimack)

The meeting was called to order at 10:02am by Chair Rep. Rosemarie Rung.

Rep. Rung read the Right to Know notice.

Ms. Fordey (clerk) called the roll for attendance. Commission members stated their location and if anyone was in their presence. Rep. Rung confirmed a quorum was present.

Ms. Harrington moved to approve the meeting minutes from the January 8th, 2021 meeting, seconded by Ms. Murphy. There were no suggested amendments or corrections to the minutes. The motion to approve passed unanimously by roll call vote.

Rep. Rung formally announced that Sen. Carson and Sen. Daniels have been appointed to join the committee, however they are not yet connected as panelists to the Go To Meeting webinar and we are not sure if they are able to join us today. In addition, as there are several members of the Commission not present today due to scheduling conflicts, elections for new chair and/or clerk will be postponed until a greater majority of members are able to join us. Rep. Rung reminded members of the Commission to discuss with the person you would like to nominate for Chair or Clerk prior to nominating them so they are not surprised when the nomination comes to the floor.

Ms. Harrington was recognized to introduce the special guests/presenters from the Town of Merrimack who have an update on Saint Gobain Performance Plastics (SGPP). However, the guests were not on the attendees list. Ms. Harrington noted that the presentation prepared for the

Commission today is the same presentation that was given before Merrimack Town Council last night, which several Commission members attended including Rep. Mooney and Sen. Daniels.

As the guests were not yet connected to the meeting platform, Rep. Rung suggested that the Commission continue on in the agenda and when the guests are connected and ready we can switch to the presentation.

An update on well sampling was requested by Ms. Messmer from NHDES. Rep. Rung reported that an update will be ready by Mr. Wimsatt for the Commission's March meeting.

Ms. Messmer was recognized to provide a summary of the NH Safe Water Alliance summit that took place virtually on January 30th. Ms. Messmer reported that the summit brought international and national experts to New Hampshire virtually to inform people about the latest on PFAS and health effects. The first speaker was Megan Romano, PhD from Dartmouth College, who spoke about the health effects of PFAS. Next was an international expert from Copenhagen Philippe Grandjean, PhD, who spoke on the effectiveness of vaccines in the presence of Covid-19 and PFAS exposure. He was followed by Gretta Goldenman discussing the cost of inaction. She has done some studies in Europe which looked at the cost of inaction - not acting to regulate chemicals that impact public health. She also presented about a pilot study in which New Hampshire was selected as a pilot study location along with California for whether or not this type of study could be viable in New Hampshire. That's underway right now and it is expected by the end of the summer we will have a report out on that. We were very excited to bring these experts to New Hampshire. We had a great turnout, and the NH Safe Water Alliance is having another summit on Saturday March 6th, 2021 10am-12pm. We will be joined by Linda Birnbaum, PhD, who is the former head of the National Institute of Environmental Health Services and formerly of the Environmental Protection Agency Region 1 (New England), and Jim Murphy who has recently retired from the Environmental Protection Agency. We're happy to continue to provide that kind of expertise to NH so people understand what our communities are facing. Ms. Messmer also recognized that Ms. Murphy presented at the NH Safe Water Alliance Summit on January 30th.

Ms. Murphy reported that Don Provencher from the Merrimack Village District (MVD) also presented at the NH Safe Water Alliance summit and detailed the community impact of PFAS contamination of the water in Merrimack including an informative video. Ms. Murphy thanked Mr. Provencher for the presentation.

Dr. Bush asked if the presentation was available on recording as she was unable to attend the summit. Ms. Messmer said that the presenters did not approve a recording unfortunately.

Ms. Costello asked if the summit in March will be recorded. Ms. Messmer reported it depends if the presenters consent to a recording. Ms. Messmer reported she will let the Commission know if a recording becomes available.

Rep. Rung reported she attended the summit and found it very helpful and informative and encouraged all members of the Commission who are able to attend the March 6th summit. Ms. Messmer reported that if people on this Commission are interested in getting reminders about

NH Safe Water Alliance events like these summits, they can sign up via the Facebook page or NH Safe Water Alliance's website. It was also suggested that Rep. Rung could forward any reminders of upcoming events that she receives to members of the Commission.

Mr. Wimsatt reported he had been in contact with Ms. Rousseau from NHDES and that she was working on getting Sen. Carson and Sen. Daniels into the meeting. Mr. Wimsatt also reported that Ms. Rousseau confirmed that guests Sarita Croce and Joanna Tourangeau are connected.

At approx. 10:15am Sen. Daniels and Sen. Carson were added as panelists to the meeting. They reported they had attended in listen only mode since the beginning of the meeting. Rep. Rung welcomed the senators to the Commission.

Presentation - Updates in the Town of Merrimack Regarding SGPP

Sarita Croce and Joanna Tourangeau were recognized to present on updates regarding Saint Gobain Performance Plastics (SGPP).

There was a pause in the meeting as there were technical difficulties in the presenters being able to share slides and be heard by other participants.

[At approx. 10:25am Rep. Chretien joined the meeting.]

Ms. Harrington provided an introduction of the special guests and the topic of the presentation. Ms. Harrington reminded the Commission that the Town of Merrimack has been involved with Saint Gobain Performance Plastics (SGPP) water contamination issues since 2016. She stated provided permission for these two guests to present information to the HB737 Commission regarding very important recent events related to the continuing contamination of Merrimack and surrounding towns by SGPP. Sarita Croce is the Merrimack Assistant Director of Public Works/Wastewater, and she is responsible for all environmental compliance. Joanna Tourangeau is Merrimack's environmental attorney. She's been an environmental attorney for 20 years and has represented the town of Merrimack in all issues related to SGPP. Ms. Harrington stated that it must be said that the Town Council is very appreciative of these two individuals who have have the in depth knowledge and impetus to help us understand all of the nuances of this very complex scientific situation and all of the legal ramifications. It must also be noted that Merrimack's Town Manager Eileen Cabanel has been a pivotal leader and director and has coordinated all of these efforts. Sarita Croce will provide a fundamental explanation of the current status of SGPP contamination and Joanna Tourangeau will provide an explanation of the legal ramifications.

As Sarita Croce was not yet able to be heard on the virtual platform, Joanna Tourangeau was permitted to begin the presentation.

Joanna Tourangeau explained that she was retained by the Town of Merrimack about a years ago after NHDES issues SGPP a temporary air permit on February 11, 2020. The air permit required

installation of a regenerative thermal oxidizer (RTO). Ms. Tourangeau explained that a RTO is a 40+ million dollar furnace that burns and combusts the bonds between the different components of PFAS in order to break them down and take them out of the air in a form that they currently contaminate in emissions.

The temporary air permit required that within 12 months of permit issuance SGPP shall complete construction and installation of controls consistent with the permit. Operation of the source may continue through the permitting, construction, and installation time. The permit also required that SGPP complete an analysis of emissions of toxic air pollutants within five months after the RTO came online. The permit expires at the end of August 2021.

The Town of Merrimack appealed the permit to the Air Resources Council because it only included specific limits for two regulated PFAS, specifically PFOA and PFOS, did not require optimization of the RTO to ensure combustion of all PFCs and precursors, and because New Hampshire law requires assessment of emissions of toxic air pollutants and a determination of whether control technology is required before the RTO is emitting those pollutants, not after the fact. This appeal is scheduled for hearing by the Air Resources Council in April.

On January 11th, 2021 SGPP notified the Town of Merrimack that it would not be bringing the RTO online by the one-year statutory deadline in the permit, by February 11th, 2021. SGPP indicated that NHDES was aware of this compliance status. However, SGPP's January 15th, 2021 monthly compliance report, regarding bringing the RTO online, did not indicate that it would not be online in compliance with the permit. On February 10th, 2021, the Town of Merrimack asked SGPP to confirm that, by the one-year permit deadline, it would terminate uncontrolled emissions of PFCs and precursors within the Town of Merrimack, including by termination of operations as required by the temporary permit. SGPP responded to that request on February 11th, 2021 at approximately 4:15pm, indicating that, "in accordance with the plain language of the temporary permit issued to SGPP, SGPP is required to, is complying, and will comply, with the maximum allowable annual PFC emission limitations for the two PFC compounds regulated by the temporary permit, i.e., for PFOA less than or equal to 0.45 pounds per year and for PFOS less than or equal to 0.57 pounds per year.

Ms. Tourangeau summarized that SGPP understands its permits to only limit its emissions of PFOA and PFOS, regardless of New Hampshire statutes setting ambient groundwater standards for additional PFCs and precursors, despite the NHDES determination that SGPP's emissions caused or contributed to exceedance of those ambient groundwater standards, and despite New Hampshire statute specifying that SGPP must install the RTO by February 11th, 2021. There is no exemption from the statute, allowing operations, resulting in emissions, after the expiration of the one-year deadline for installing the RTO. SGPP applied for a variance to get another year to install the RTO and NHDES denied its request for more time, in part because allowing more time presented a threat to public health.

Ms. Tourangeau stated that she was asked to make suggestions regarding improvements to the laws to address PFC emissions. She believes there is value in legislation implementing broad regulation of all PFCs and precursors, and related compounds like Gen X, which are coming to replace the more traditional PFCs, as well as rulemaking requiring NHDES technical review of

compliance with design and construction of control technology within the one-year period. This would be in order to avoid the result that we're seeing now, where you get to the end of that design and implementation period only to find out that there has been a complete failure of progress. She thinks that check ins at the 30%, 60%, and 90% timelines would be a sensible check in timeline for NHDES to have authority to implement that it does not currently have. However, Ms. Tourangeau stated, SGPP's course of conduct is already in clear violation of existing laws. Therefore, the question that remains is why it falls to the Town of Merrimack to address the issues with SGPP. This concluded Ms. Tourangeau's presentation.

Sarita Croce is the assistant director for the Town of Merrimack wastewater treatment facility. She provided an overview of the work that has occurred in the past 5 years in Merrimack to evaluate the activities of SGPP. She explained that the two main reasons the Town of Merrimack appealed the air permit of SGPP were: Hydrogen Fluoride (HF) emissions and concerns about the RTO (pollution control device) optimization.

Ms. Croce began by explaining that she came from the industrial side of the world and worked for a company where there was a 10,000-gallon tank of Hydrogen Fluoride (HF). It was a company that made capacitors and you use HF in the process. 21 years ago, when she was at that company, they took it very seriously. HF an inch and a half square on your arm of 30% could kill you. Whenever there was a detection, with the toxic gas detection system of HF, doors would come shutting down and people in Level A suits would be sent in to go and sniff every valve and every opening to make sure that they could find where the leak of HF was coming from. This is to emphasize that this stuff is real, and HF is a real hazard, so that's why we focused in on it.

Now, SGPP discovered that there was drinking water contamination in New York and Vermont and so as a result, they took some samples from here in the Merrimack Village District (MVD). They self-reported exceedances in that water quality on February, 26 2016. It's very important to note that the towns of Merrimack, Bedford, and Amherst receive drinking water from MVD, and the aquifer from which wells 4 and 5, which were the two wells that were of concern here, is underneath SGPP itself. SGPP commenced an investigation with NHDES. They worked concurrently to evaluate groundwater surface water stack emissions and determined, both not only what the extent of the contamination is, a real focus here was to try and figure out what caused the contamination. The contamination went as far as Litchfield, which is across the river from Merrimack. Stack testing was conducted in April 2018, and it was determined after that point that the primary reason for the groundwater contamination was from the process stacks at SGPP.

Ms. Croce reviewed the Maximum Contaminant Levels (MCLs) that are established in NH in parts per trillion (ppt): PFOA – 12ppt; PFOS – 15ppt; PFNA – 11ppt; and PFHxS – 18ppt. This is important as the highest levels detected in the groundwater monitoring well in Merrimack between March and July 2019 all exceed these MCLs – most noticeably the detection of PFOA at a level of 69,500ppt.

As a result of the contamination and investigation work in 2018-2019, NHDES determined that the devices operated at SGPP have emitted and continue to emit these PFCs that continue to contribute to an exceedance of the ambient groundwater quality standards.

SGPP was required to put on best available control technology (BACT), as defined by <u>NH RSA</u> <u>125-c:10-e</u>. When you install best available control technology (BACT), the point of that is to remove the stuff that you're trying to remove to the maximum capability of that technology. As far as the Clean Air Act is concerned, it's a well-established concept that has been applied all over the country.

SGPP was required, after receiving the letter on September 10th, 2018, to submit an air permit application within six months, and then they received a permit which mandated installing emission controls that were considered BACT by a deadline of February 11th, 2021. The permit happened to state that the BACT was decided to be an RTO. As a reminder, 2019 was when the 69,500ppt reading for PFOA was detected in the groundwater monitoring well. In 2020, NHDES issued a temporary permit, which was four years after SGPP initially notified NHDES. To comply with BACT, SGPP said they would install the RTO. They indicated the temperature at which the RTO would operate, and they recognized that through the combustion process, because all of these molecules that we're dealing with have fluoride compounds, the molecules have the potential to generate Hydrogen Fluoride (HF), which is a safety concern for the Town of Merrimack.

When the draft temporary permit was issued, the ambient groundwater quality standards (AGQS) were in place which led to emission limits as follows: PFOA - 0.075 lbs/yr; PFOS - 0.048 lbs/yr; PFNA - 0.024 lbs/yr; and PFHxS - 0.015 lbs/yr. However, in December that year those numbers were stayed and therefore NHDES changed the permit and reverted back to the Health Advisory which was 70ppt for PFOA, 70ppt for PFOS, and 70ppt for the two of these combined. As required by New Hampshire statute, the Health Advisories would be the ambient groundwater quality standards.

Following the issuance of the permit, the Town of Merrimack submitted an appeal to the Air Resources Council, which is still under review. On June 4th, 2020 SGPP requested the extension of the deadline to install BACT. NHDES denied that request for the extension and based the denial on two simple facts. One was that the emissions from the SGPP stacks, continue to cause and contribute to the condition of groundwater contamination and exceedances to the ambient groundwater quality standards. Two, allowing the variance, allowing the extension, would create a danger to public health, and they actually stated this in their finding of fact document which was issued in response to the variance request. When we look at this process that has been established by the Air Resources Division, what they do is they get a permit application, they evaluate the permit application, they decide what they've got to do, they establish that perhaps they need to put on an air pollution control device, and then mandate that air pollution control device. Then the next time NHDES actually has involvement from the Air Resources side is when, after the air pollution control device is online, and then they have to go stack test it.

This process is different in other divisions. For example, the Town of Merrimack is installing a \$22.62 million upgrade, and our plans and specs, because we are receiving a loan from the State of New Hampshire, are reviewed at the 30, 60, and 90% design and we just received approval

in December to bid the documents and we have been submitting the bid. That's a really important concept to understand, because a lot happens between the time you issue a permit, and between the time the design is done.

On November 24th, 2020, SGPP actually submitted to the Town of Merrimack a three-page application to install a pad for the RTO. This emphasizes a deficiency, in Ms. Croce's opinion, in the regulations, which unfortunately resulted in this type of submission. If you take a look at SGPP's application, it is a drawing on an 8 1/2 by 11 piece of paper. There is no PE stamp over here, and this was for the concrete pad, and on the drawing submitted it says "for discussion purposes only not for construction." Ms. Croce stated this is the type of application that would be received if someone wanted to build a deck or a shed on their own property. This is not the application that one would get from a major multibillion-dollar company who is installing a major piece of pollution control device.

The other thing to note here is that in the Town of Merrimack, we've had six fires over the last 10 years at SGPP. As a result of the six fires, what we do here is we protect public health, and it's very important for the fire department and the building department to evaluate all of these projects to ensure that they are built in a manner that is safe to our responding firefighters, as well as to the abutters. The last thing anybody wants is a fire. One of the fire department's major concerns was that when you look at the horizontal ductwork that SGPP was going to install on the roof, it was hundreds of linear feet. Then you look at the fact that the RTO would be on the ground. It would be like a rollercoaster where the ductwork would then go onto the ground and somewhere you could potentially have condensation, which would result in volatile organic compounds and the PFAS being in the ductwork and causing a fire. It's a very serious issue and it is important that it is taken care of, as well as one would think that SGPP being a multibillion-dollar company would address this issue.

On January 11th, 2021 SGPP notified the Town of Merrimack that they would not be installing the RTO by the February 11th, 2021 deadline. On February 9th, 2021 Ms. Croce sent an email to NHDES asking for an update on the status of the non-compliance and the response received was that NHDES does not comment on pending enforcement action issues.

The Town of Merrimack has spent a considerable amount of money doing the technical evaluations that should have been done as part of the permit review process. One of the concerns that we had was if you look at the chemicals that are being discharged you have both PFAS and you have something called Gen X. Now Gen X is the chemical that the industry has gone to that replaces PFAS. The point that needs to be made here is that Gen X has fluoride molecules, just like PFAS has fluoride molecules. One of the concerns that we had was that the stack testing that was conducted had considerable issues associated with the analysis of Gen X. There were considerable other issues associated with QA/QC problems with the stack testing. Finally, if you look at the coating products that are used to coat the fabrics and the films that SGPP makes, what you'll see is Gen X is present in orders of magnitude higher concentration than any of the PFAS.

One of the other things to note is that NHDES did do an evaluation of the HF. They found that based on their calculations, that the 24-hour predictive impact was 83% of the 24-hour ambient

air limit (AAL). That's the limit, or that's the concentration at the fence line or beyond the fence line, you should be able to maintain so that you do not impact public safety and public health.

The next questions clearly are: How are these things calculated? and Do they accurately represent the potential emissions? Let's explain how stack testing is completed. You pull a sample of the stack gas to a bunch of places where you collect the sample. In this case, SGPP used the modified method five train. They had a front half filter. They had a XAD resin trap, so XAD is just the resin, that's the name of the resin. They had three impingers and the three impingers were filled with fluid, one had sodium borate, one had sodium hydroxide, and Ms. Croce forgot what the third one had. They had a back half filter. Then the other thing you do when you stack test is you want to use a methanol rinse and you want to rinse all of the equipment, and then when you collect that sample you analyze that also for PFAS because the PFAS or the contaminants are the constituents of concern. They could be stuck to anything inside that stack train so it's very important to do that.

Barr's Stack Test Plan was submitted to NHDES. It was approved. One of the things that they said in their stack test plan is that when something is detected below detection limit it's not zero, there's always a number that we assign to it, and Barr had identified that they would use the reporting limit (RL) to associate with those non detects in calculating the emissions. Barr used instead the method detection limit (MDL), and the method detection limit was lower than the reporting limit and the reporting limit has a much higher degree of confidence associated with it.

The analytical lab had values reported for Gen X in the XAD resin sample, but there were significant issues with completing that analysis. What Barr did in their report, they actually deleted the mass of Gen X from the XAD traps, which means they were essentially setting it to a value of zero. As a result, the mass calculated for each run was based on six of the seven samples for Gen X, and now remember that Gen X was present in those coating mixtures in orders of magnitude higher concentrations. So, we are significantly under estimating the Gen X results, which in turn significantly underestimates the amount of HF. There are also issues with surrogate recoveries and the isotope dilution method that they used to do the analysis. Isotope dilution means, I put a known quantity of a surrogate or a chemical in at the beginning of the whole process in that jar that I use to collect the sample. Then once I go through the process, the surrogate is analyzed at the end. Well, what they do in isotope dilution is depending on the result or, depending on the recovery of the surrogate, they correct those analyses. For example, if I had 100 milligrams of PFOA and they recovered 50, I would multiply all the results of PFOA by two. What happened here is because they had issues with their surrogate recoveries, they actually spiked the sample with additional surrogate before they analyzed it in the LCMS or the GCMS. What that does is it artificially inflates the performance. It's also absolutely against the protocol, but it artificially inflates the performance and so what happens is, if you're following isotope dilution, you're not correcting for the actual issues.

There were aspects also of the data quality plan that Barr put together that were just not correctly done. Ms. Croce clarified that the analysis and review that follows was completed by Elizabeth Denley, and several slides that Ms. Denley presented to NHDES. She indicates here that there were data quality issues. Ms. Croce displayed a powerpoint slide and explained that these are a bunch of chromatograms, and if you look at all of these chromatograms and you look at the ones

on the left-hand side you see they look pretty good. How you calculate a concentration, using a chromatogram, is you have a standard solution, which you put in and that helps you to identify what the units of measure are, and then what you do is you calculate the area underneath all of these curves. Then that's correlated to your standards, and now you can figure out what the concentration is. Look over here on the right-hand side, and HFPO-DA is Gen X, and this particular chromatogram doesn't look too great. It wasn't something where they could easily determine what the issue or what the concentration was for Gen X.

Now on this slide here, she talks in pretty much excruciating detail about all the other issues that had come up. She talks about recalculating concentrations, what we did after we realized the issues that were present in the Barr Stack Test Report, Ms. Denley went back and she actually recalculated the values. She also actually went back and switched out the MDLs for the RLs. What happened was she created a new set of data that could be used. Even though we recalculated the Gen X concentration, there were huge issues with that analysis, and those results are very highly suspect so everybody should keep in mind that poor chromatography and interferences are a huge issue, and ordinarily if you have that problem, what you would be required to do, is re-stack test or reanalyze.

Ms. Denley talks a little bit about those surrogate recoveries. They were diluted out making the quantification of the PFAS, and AA means alkyl acids, pretty much impossible because you didn't know. Then what they did is they spiked them again. Because it had not gone through those prep steps, it had not gone through everything else that the surrogate recovery should have gone through, it really wasn't representative of what the concentrations would be, or the adjustments that should have been made.

Ms. Croce highlighted the PFAS detection limits - the MDL was 0.0025 micrograms per liter and the RL was 0.010 micrograms per liter. This just shows you that the RL was higher than the MDL, and in this case, it was supposed to be used as part of the stack test protocol, whenever there was a non-detect.

We know that there were some detection limit issues, we know they weren't consistent in how they applied it. We know that for Gen X, the results were not conclusive, so effectively the results were set at 0. However, chemours actually found that Gen X is present in the highest concentration in the XAD trap. We know that the correction performed because they diluted out the surrogate recoveries is not appropriate here.

[Ms. Costello left the meeting due to another commitment at approx. 10:55am.]

Ms. Croce referred to a powerpoint slide, stating this chart comes directly from the Barr report and you see here these two boxes shaded out, this is where Barr inside the 4,000-page report, they buried it, and this is where they placed the zero. Zero concentrations, it's always an issue. We don't want to put zero in these numbers because that's not representative. The other thing that we want to note here is normally when you perform stack testing you perform it at the maximum production rates. Why is that important? Because you want to see the potential to emit, what those emissions would be at those maximum production rates. In this case, SGPP and Barr did not do stack testing at maximum production rates. They did it at something called representative or average operation. Just by the fact that you're doing it at average and you're not conducting the testing at maximum, you are underestimating the emissions. Then we'll also talk about the issues with the dip pans and their chemicals.

There were significant underreporting biases in the air emissions calculations. This is the dip pan results, so as part of the stack test program, what Barr did is they actually collected samples from the chemicals, or the mixtures that were coating the materials during the testing. If you look at this bottom line here (on the slide showing dip pan results), you can see that is HFPO-DA, that's Gen X, if you remember that had a bunch of fluorides just like the PFAS have. Now, MA tower, this is the first run, the dip had had 1580 micrograms per liter which is a PPD of Gen X. You can see for all the runs that the concentration of Gen X detected is magnitudes higher than PFAS.

Ms. Croce displayed a chart of XAD trap lab results from the Barr report and another chart of XAD trap lab results that has corrected values based on Ms. Denley's analysis. Ms. Croce explained that we don't have a lot of confidence with these results because we know that the analytical lab had a tremendous amount of problems with Gen X itself. So, based on the dip pan results, say that the results are probably significantly higher than what are presented here in the corrected values.

Ms. Croce reported that the Town of Merrimack presented all of this information to NHDES. NHDES reported they did not rely on the Barr Stack Testing Report. What they did is they had an agreement with US Environmental Protection Agency (EPA), Office of Research Development, to actually complete the analysis on their own. So, EPA issued the EPA ORD Report #6. This report presented the non-targeted uncalibrated response that only provided relative abundance. Uncalibrated response means they did not have a standard solution. They didn't have the ability to say what the area under the peaks represented. What they did is they just calculated the area underneath the peaks of the chromatogram. With that information, NHDES created a regression of some sort to calculate the concentrations of PFAS. The problem with the regression was, we requested a copy of the spreadsheet that they used, and the regression formula was not provided to the town, and we tried to recreate the regression. Unfortunately, if you look at a scatterplot there was zero correlation. We actually could get no correlation whatsoever with the data that was provided by EPA, such that a regression could be performed.

There were seven samples that were analyzed or should have been analyzed as part of this whole process. There were seven steps in the process. EPA ORD only analyzed the front half and back half filters and the XAD trap. EPA ORD did not analyze specifically for Gen X so that was also left out. EPA ORD detected 190 different PFAS compounds and they tentatively identified 89 so that means for 89 compounds they calculate the structure, and they calculated an area underneath that curve. Of those 89 compounds only 34 of them had nonzero concentrations. NHDES performed their linear regression and they gave a value to 34 of them. Doing the math of the 190 detected compounds, 156 of them were given the value of zero. This is not inconsistent with the stack test protocol that was developed, and protocol is everything in these situations. They used the results that they calculated from the MA tower and they applied those to seven other process stacks.

Ms. Croce reported that the following points to why this whole process was flawed. If you look at the report and Barr only analyzed 11 or 12 of these PFAS compounds and EPA ORD analyzed a tentative list, but if you look at the report, PFOS, PFHxS, PFBS, PFHpA, and Gen X weren't identified and PFOA in the EPA ORD report is identified as zero. Now, PFOA they also only use the first run of the entire program, EPA ORD also only had collected the samples from the first run, instead of analyzing samples from all three runs. But the highest concentration of PFOA was in that first run of the MA tower and NHDES used a value of zero there.

The conclusion here is that neither EPA or Barr actually completed an evaluation of the AALs that was compliant with Env-A 1400. If you take a look at the fact that we're already, without counting Gen X, we're already at 83% of the 24-hour AAL, it begs the question why SGPP has never been required to provide a potential to emit calculation. We believe based on the review that we've done that all of this would trigger the need for a control technology to deal with the HF. The way the permit is currently structured, what would happen is SGPP would put on the RTO and then within several months later they will stack test and it takes another 60 days to get everything, so it would be five months before we would ever even know if there was a problem. That is definitely a huge concern there.

Ms. Croce indicated she would be switching topics a bit to focus on the RTO and BACT (best available control technology). This presentation was given to NHDES by Paul Murphy, who is our air consultant. BACT is an emission limitation based on the maximum degree of reduction of each pollutant from the Pollution Control Device. It's really important to understand BACT is not based on what you have to do, what the toxicology tells you, or what the toxicity is telling you. BACT is what has to be done based on what the pollution control device can do. What we know is that the pollution control device is capable of achieving 99.99% destruction efficiency. The argument came as we were going through this process that you can't test down to a level where you can check and see 99.99% of destruction efficiency. That doesn't matter. You still can achieve it and it still has been demonstrated. Stack testing protocols can be developed that will collect enough sample, where you would be able to detect at those low levels. Because remember I'm pulling a stack gas sample, if I'm pulling it for a half an hour, I get so much. If I pull it for an hour or two hours, I will get that much more of the chemicals in that sample so it's a matter of that protocol that you use. The application identified the RTO to take into account all factors. One of the factors that they should have taken into account was that maximum degree of reduction. What the permit did, which was very confusing, is they used the less stringent RACT rules, which is the reasonable available control technologies, to control VOC's, not the PFAS as it seemed to be that they used that as their basis for the BACT performance of the control device performance. We're definitely concerned with that.

The BACT analysis needed to include not exceeding the AGQS and the AAL concerns associated with Hydrogen Fluoride (HF). BACT should have included HF as part of the evaluation, and it seems based on the permit, there seems to have been a compromise between HF and the destruction efficiency, and that's not the intent of the regulations at all. In addition, relying on just temperature alone is not indicative of performance of an RTO. If you imagine for a second your dishwasher, and a dishwasher is set to clean your dishes at whatever temperature. If you look at your dishwasher on the bottom, when it's brand new, all of those little places all those little ports where the water comes out, they're all working. Well what happens if 50% of all those little ports where the water comes out are plugged? Now you have a dishwasher that maybe is achieving temperature, but you're not able to achieve the cleaning ability because half of these ports where the water comes out aren't working. That's what you should keep in mind, that temperature is not the only indicator of performance of anything. What you want to have is not only diagnostic evaluations, but efficiency. That's the thing that really tells you that it works right. So when I put my dirty dishes in, and I pull my dirty dishes out, if there's still food on those dishes, my dishwasher isn't working. That's the thing that you want to be able to use to understand that performance is working the way it should be.

Rep. Rung asked if the Commission members had any questions for Ms. Croce.

Ms. Messmer asked Ms. Croce to describe what precursors are.

Ms. Croce responded that precursors are compounds that are not PFAS yet but are the building blocks of what it could be, pieces that combine together to make the PFAS molecule. So think of Legos. And think of you got PFAS has red, yellow, orange, green Legos. So the precursor could be just the red Lego and it could be the green Lego and it could be the orange Lego. And then when it goes through the system when it gets discharged, over time, they all combine, and they make that molecule that we don't like and we don't want to have.

Ms. Messmer asked what is the significance of precursors with respect to the emissions at SGPP?

Ms. Croce responded that they still discharge those precursors and they can still make those chemicals those four PFAS that we have MCLs for (PFOA, PFOS, PFHxS, PFNA), they can still make them in the groundwater. So just because they're not specifically discharging those four PFAS, it doesn't mean that it won't be created in the ground and in the environment.

Ms. Messmer stated that products with a PFOA-free label but have PFOA in it, have the precursors in it. Ms. Croce agreed that this is correct.

Rep. Chretien asked how long it would take to calculate all of this properly and re-run the analyses.

Ms. Croce responded that they should have gone back and re-stack tested and re-analyzed. Samples can be held in the 28-30 day range, so by the time they were able to re-analyze it they were outside of the holding time. That was probably not a big issue in terms of the analysis of these compounds. But again, protocol is protocol and it is very important to adhere to protocol. The test that they did was a pretest in my mind, when I look at those analytical results and I look at all the issues that were present in the actual stack testing. It was a pretest. So now when they go back, they will be able to address those issues and they'll be able to execute a much better stack test program. Also, the issues that we had back in 2018, in terms of just the analysis of the XAD trap and some of the other things, they've been resolved at this point, so we've made a lot of progress in just analytical method alone. You wouldn't have those same issues if you did a stack test program today that you had in April 2018.

Ms. Murphy asked who is responsible for oversight of the stack testing and lab analysis to make sure it is correct, and we are not relying on inaccurate data. Is there a specific person or agency?

Ms. Croce reported that NHDES has a stack test group in the Air Resources Division, a stack test protocol is submitted to NHDES for review, NHDES reviews the stack test protocol, and they approve it. In the stack test protocol, they have all of this detail that I was talking about in terms of the analytical, so on and so forth. Then, during the stack test, the stack test is always observed. Somebody from NHDES will actually go and they'll observe it. Then following the stack test the report is submitted and again NHDES reviews and approves it. The oversight is NHDES.

Ms. Murphy asked if NHDES would be responsible for requiring that stack testing be done at maximum production rates.

Ms. Croce – we asked NHDES about this and have not gotten an answer. Other companies have been pushed to stack test at maximum rate. We don't know why they picked what they picked.

The Env-A 1400 Compliance Determination Flow Chart (available here: <u>https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/NH-flowchart-2017A.pdf</u>) shows that when you base compliance on air dispersion modeling, you are supposed to base it on potential to emit. When you look at the Town of Merrimack, in our regulatory compliance approach, we treat everyone the same, established protocols should be followed and should not be different based on the company.

Ms. Murphy thanked Ms. Croce for the informative presentation.

Ms. Messmer stated the appeal is scheduled for April, but emissions continue every day, and asked where do things stand now. Has NHDES responded to the Town of Merrimack's concerns with the technical aspects?

Ms. Tourangeau explained that this will all be addressed in the appeal – NHDES will be in the position of defending the permit that it issued and the Town of Merrimack will be asking for action. The Town of Merrimack town council authorized legal counsel to seek injunctive relief to terminate emissions until the RTO is installed, taking action within days not weeks to address the issue. The Town of Merrimack is hopeful that NHDES will implement enforcement action against SGPP but does not feel it can wait and see what happens.

Ms. Harrington stated that after this presentation it is the first time that she has understood so clearly the issue of inconsistent application of protocols regarding stack testing, and the weight of that issue. Ms. Croce agreed that the concern about inconsistent protocols is very important.

Rep. Rung noted that NHDES has been discussed a lot during this presentation and asked Mr. Wimsatt if he would like to respond to anything. Mr. Wimsatt responded that almost everything that has been discussed is a subject of the appeal or potentially filings in the near future and thus it is inappropriate for him to comment at this point. He recognized understanding this this response would be unsatisfying. Ms. Messmer asked Ms. Croce to clarify if the slide showing the 4 PFAS compounds with maximum levels detected was from monitoring wells, public drinking water wells, or private wells.

Ms. Croce reported that the maximum PFAS levels detected were from monitoring wells located on the SGPP facility property close to the building. The October 2020 supplementary site investigation report includes tables of all the analytical results of all the monitoring wells.

Rep. Rung noted that in a previous meeting, a presenter provided to the Commission maps indicating location of the various monitoring wells.

Ms. Croce reported that Mr. Wimsatt from NHDES could most likely get more results of PFAS detection amounts in public drinking water well and private wells. Ms. Messmer was reminded that this item is on the agenda for the Commission's March meeting.

Ms. Murphy asked if she would be accurate to state that at this point SGPP is operating without a valid permit and emitting PFAS in our environment, increasing the risk to all of us, in exceedance of regulations.

Ms. Tourangeau stated that this would not be accurate as SGPP does have a valid permit, however they are not incompliance with the one-year deadline within that permit to install the RTO to combust their emissions, so that those emissions are not causing or contributing to violations of the ambient groundwater quality standards. They are continuing, as they say in their response to the Town of Merrimack, to comply with the EPA Health Advisory limits that were set in their permit based on the time that their permit was issued for PFOA and PFOS. But they are, by their own concession on February 11th, 2021, not planning to comply with the four ambient groundwater quality standards that were set by the legislature.

As there were no further questions, Rep. Rung thanked the presenters and indicated the Commission would move to the next item on the agenda. Rep. Rung reported she will submit the powerpoint slides from the presentation to be posted on the Commission website.

Review of Interim Report Recommendations

Rep. Rung has created a table of recommendations from the Commission's interim report – legislative and non-legislative – 7 total bills have been filed. The bill to add representation from Londonderry to the Commission had its public hearing and the committee unanimously supported that to be passed. The bill should be voted on by the full House at the end of February and then move over to the Senate. Rep. Rung will speak with Sen. Daniels offline to see if he can help champion the bill when it is in the Senate.

The bill to change current RSAs to reflect the accepted nomenclature of PFAS rather than PFCs was heard in committee for public hearing but has not been in exec committee yet for a recommendation, this should happen soon.

Ms. Fordey offered to send information to Rep. Rung about upcoming public hearings on some of the bills related to the Commission's interim report recommendations.

Rep. Healey reported he can send information to Rep. Rung about the bills set for public hearing in the House Judiciary Committee next week.

Rep. Rung will update the table with bill numbers and public hearing information for these bills and send to the Commission. Individuals should feel free to take a position on these bills and register their support/opposition or even testify if they choose.

Updates from Subcommittees

Health and Environmental Subcommittees have not met – challenge while standing committees are hearing bills – lack of bandwith for remote meetings. Official subcommittee meetings need to be posted in the calendar and available to the public.

Commissions Subcommittee – Chair Ms. Paradis unable to be present today; however Ms. Murphy, Ms. Messmer, Ms. Fordey, & Ms. Paradis met informally to discuss public education re: PFAS and coordinating info and NHDES/NHDHHS community presentation(s).

Rep. Rung noted that it is important that Londonderry is included in any public education/information efforts.

Rep. Rung asked subcommittee chairs to reach out to NHDES with specific time/date and see if NHDES might be able to host a subcommittee meeting, especially while the House standing committees are still meeting five days a week.

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NHDES Update – Mr. Wimsatt

SGPP has yet to obtain local approval for support structures, including concrete installation, related to construction for the Regenerative Thermal Oxidizer (RTO). Most recently, SGPP reported that it expects to take delivery of the unit in April, but has expressed concern that without local approval to pour concrete, installation will be further delayed.

The hearing before the Air Resources Council regarding Merrimack's appeal of SGPP's air permit has been postponed to April due to differences over procedural matters.

SGPP submitted a Supplemental Site Investigation Report that includes a preliminary screening of potential remedial alternatives. This plan is currently under NHDES review. SGPP's consultants submitted a work plan in January for additional stormwater sampling that will be conducted after the RTO is operational. We expect that this work will be conducted in late summer/early fall.

Flatley Development - Flatley has submitted a work plan to evaluate PFAS in soil in the areas that are going to be disturbed as part of the construction per NHDES' request in a letter dated 9/21/20. This work plan is currently under NHDES review. Flatley has also submitted a soil management plan this is currently under review. This project has been indefinitely postponed due to permitting needing w/ Town of Merrimack.

Last phase of Consent Decree water line extensions/connections are now complete with the exception of well decommissioning/site restoration and final resolution of the curb stops at undeveloped properties. This completes the connections outlined under the 2018 Consent Decree. SGPP's consultants will submit a remedial implementation report(s) documenting how each property listed in the CD was addressed.

SGPP has presented a Work Plan for Residential Well Sampling and a 7th addenda to the Plan.
As of 2/2/2021 (date of last tally):
1953 properties identified for sampling
1638 access agreements sent
814 samples collected from water supply wells (82 additional since last month's update)
493 properties offered bottled water (45 additional since last month).

NHDES requested an updated estimate on the timeline for sampling and permanent alternate water in a letter dated December 17, 2020: <u>https://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4892196</u> We expect a response in the next bi-monthly submittal due by the end of February.

NHDES requested: 1) investigation of potential groundwater impacts due to air deposition from the facility throughout the ENTIRE CD AREA – NHDES does not agree with fixed buffers around other potential contamination sources excluding sampling; 2) framework to prioritize second samples of properties with detected PFAS that are below AGQS in light of potential seasonal variation and that bottled water is contingent on an exceedance; and 3): alternate water should be provided to properties within buffers and properties with potential other sources that are also impacted by air deposition (e.g. properties with PFSAs)

https://www4.des.state.nh.us/IISProxy/IISProxy.dll?ContentId=4894693 We expect a separate response from SG on this topic.

SGPP's consultants indicated on a conference call on 1/6/21 that they expect the areas with a high probability of AGQS exceedance (based on sampling data collected to-date) will be addressed in the next few addenda in the coming months. They estimated (on a call on 1/5/21) ~ 2,600 properties (likely developed and without public water) within the Consent Decree have not yet been sampled.

NHDES is exploring with SGPP and their consultant the options for implementing alternate water solutions where practicable concurrent with further sampling. Ms. Harrington reported she has not yet received a list of residences in Merrimack that have not responded to access agreement requests. Mr. Wimsatt reported he will work on providing that information. Sen. Daniels asked if NHDES gave a specific response timeline for response on the letter to SGPP. Mr. Wimsatt reported he was not sure if there was a specific date imposed although they do expect a response from SGPP soon. Sen. Daniels asked if it would be prudent to impose deadlines in any communication with SGPP so things do not drag on. Mr. Wimsatt agreed that imposing specific dates for deadlines has been effective.

Ms. Murphy responded to the part of Mr. Wimsatt's update where SGPP stated they have not received approval for the support structures including the concrete pad for the RTO. Ms. Murphy stated that based on what the Commission just heard in the presentation by Ms. Croce, what was submitted by SGPP to Merrimack for the concrete pad is not acceptable. It seems that a company that has done all kinds of permitting things before should be well aware of the standards and expectations of the application process. It seems that they're using their noncompliance with the expectation of permit applications as a further excuse to then delay the RTO installation. As if saying, "well, this is another reason why we can't go forward with the plans for the next steps." I'm hoping that NHDES is recognizing that what we've seen over time is delay tactics again and again. I can't certainly say that this is one of them, but it certainly seems that this is another complication and something that really should be a simple matter, that you need a permit for something, you fill out the application properly, you submit the right things to the town, and then it's dealt with, instead of the delay. I'm hoping that NHDES is keeping an eye on this and recognizing that this is not a challenge that the Town is creating, but that SGPP is creating. It's to SGPP's advantage again, and not the Town of Merrimack. Just from a citizen's perspective, we're pretty frustrated here. This has been going on for a long time and we see delay after delay, excuse after excuse. I think this is just one more of them.

Mr. Wimsatt clarified that he is reporting what was said by SGPP in another forum about the permits and that NHDES is not expressing sympathy or agreement with SGPP or anything like that.

Ms. Harrington noted that SGPP only submitted the plan for the concrete pad in November, and asserted that they never intended to meet the February deadline for RTO installation.

Rep. Rung asked why the Town's appeal was delayed so much, that there is now a 3rd delay pushing the hearing to April.

Mr. Wimsatt reported that there were procedural differences between the parties involved that could not be resolved with the hearing officer. Mr. Wimsatt stated that is all he knows about the reasoning behind the delay on the hearing of the Town of Merrimack's appeal.

Rep. Rung explained that her concern is particularly with the delay in the RTO installation, part of the Town's appeal is to install an HF scrubber, and it would behoove SGPP to have that decision made earlier rather than later so that it can be done during installation or at least plans. Rep. Rung asked if the frustration about the delay of the hearing on the appeal could be passed to the Air Resources Council. Rep. Rung asked if there is a compilation of results of the new water sampling (82 new wells sampled).

Mr. Wimsatt will check on the easiest way to access that information online and prepare a presentation for the next Commission meeting.

Ms. Messmer asked where the 45 homes are located that recently received bottled water.

Mr. Wimsatt reported he does not know exactly, but would guess in Londonderry where efforts are being focused right now.

NHDHHS Update – Dr. Bush

1. The Food Protection Program at DPHS is undertaking a rulemaking effort to require bottled water (bottled or sold in NH) to meet the new 4 PFAS MCLs and new Arsenic MCL.

2. During the monthly ATSDR APPLETREE Program Meeting there was discussion related to the Merrimack Risk Assessments. The Reports are one step closer to being ready to share, as they recently moved through the ATSDR e-clearance process.

3. As this Commission is committed to increasing scientific understanding of the health effects associated with PFAS exposure, I wanted to share a status update on the PEASE PFAS Health Study. The PEASE PFAS Health Study is working on recruitment for their study. Several organizations will be promoting the study via social media including ATSDR, Testing for Pease, Silent Spring Institute, and other partners across the Region. Please promote this study through your networks as well:

https://www.atsdr.cdc.gov/pfas/activities/pease/community-fact-sheet.html

4. In case anyone is interested, here is a link to proceedings from a major PFAS workshop this fall: <u>https://www.nap.edu/catalog/26054/federal-government-human-health-pfas-research-workshop-proceedings-of-a</u>. The workshop was a combination of multiple federal, academic, industry and state partners working on PFAS. There were technical discussions about the health effects, clinical guidance, remediation methods, risk management and other topics. The document highlights current gaps and recommendations for future research.

5. The Pediatric Environmental Health Specialty Units (PEHSU) hosted a Grant Rounds Webinar on January 27, 2021 focused on PFAS: Per- and Polyfluoroalkyl Substances (PFAS): What Clinicians Need to Know. Health professionals were invited to participate in the next iteration of the PEHSU National Webinar Series. The webinar series provides an in-depth and interactive platform for learning and discussion about current and emerging aspects of reproductive and pediatric environmental health presented by subject matter experts from within the PEHSU network. Some key takeaways from this presentation include:

- There are currently no deviations from established standards of care for patients with elevated PFAS serum concentrations.
- Promote standard, age-appropriate preventive care measures for general health and wellness.
- When patients express concern about PFAS exposure, be prepared to talk about exposure history, health effects, and blood testing.
- Reducing exposure to PFAS is the most important.

Additional Resources:

PEHSU https://www.pehsu.net/PFAS_Resources.html

Updates on CDC/ATSDR PFAS Initiatives https://www.atsdr.cdc.gov/pfas/related_activities.html

ATSDR Guidance for Health Professionals <u>https://www.atsdr.cdc.gov/pfas/info-for-health-professionals.html</u>

PFAS Overview <u>https://www.atsdr.cdc.gov/pfas/index.html</u>

Rep. Rung reported she attended the pediatric specialist webinar and was disappointed. She would like to see more information on new research, particularly what has come out of Denmark recently that people on the call did not seem familiar with. Rep. Rung recommended that NHDHHS host a Health subcommittee meeting to go through the information available at the links Dr. Bush provided and really call out what things are going to be helpful and relevant, particularly as we start moving forward on clinician education. Rep. Rung stated there has been some funding that's been approved in the last defense authorization bill in Washington and Senator Shaheen's office is very eager to get going on that, and there is more work that members of the Commission could be doing on that front. Rep. Rung asked if DHHS would be able to host a Health subcommittee meeting, and if Chair Ms. Messmer would be able to communicate to Dr. Bush a time/day that would work for a subcommittee meeting.

Dr. Bush reported she will check if DHHS has resources available to allocate to a Health subcommittee meeting that could focus on clinical education.

Ms. Murphy reported she also attended the pediatric specialist webinar. She recognized that this is just a start and some clinicians are just beginning to understand PFAS, but she was disappointed that more information on research demonstrating known health impacts was not presented.

Ms. Murphy asked for an update on the TrACE biomonitoring study.

Dr. Bush reported we are closer to finalizing the summary report. When it is ready to share, has gone through review and approval, we can arrange a presentation of that data. Dr. Bush confirmed that this is something people are actively putting effort towards currently.

Rep. Rung reported she will prioritize getting subcommittees scheduled and up and running if possible.

Rep. Chretien reported she is interested in joining the Health subcommittee.

Rep. Rung noted she will send an updated Commission roster to all members and requested that all members check the contact information and send updates/changes to her as needed.

Sen. Daniels moved to adjourn the meeting and Ms. Murphy seconded the motion. The motion passed by a roll call vote. The meeting was adjourned at approximately 12:00pm.

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Next Commission meeting: Friday March 12, 2021 at 10am - virtual link TBD

Minutes prepared by Nicole Fordey, HB737 Commission Clerk