

State of Vermont  
Department of Environmental Conservation  
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**Per and Polyfluoroalkyl Substances (PFAS) Statewide Sampling Plan  
Responsiveness Summary  
July 16, 2019**

The public comment period for the draft Perfluoroalkyl Substances (PFAS) Statewide Sampling Plan ended on June 18, 2019. The Agency received the following written comments received via email. The Agency's responses are provided below.

**Comment Received:** Having the permittee responsible for taking the samples, getting the sample analyzed and submitting the results to ANR assumes that the permittees will be honest and not just use a water sample known to be pfa -free. Clearly it is not in the economic interest of a permittee to have a high pfa content in the sample with possible expensive remedial measures needed. Far better for ANR to establish a fee to be imposed on the permittee and have ANR collect and analyze samples. The plan as is does not include penalties for using false samples or providing false results nor the means of enforcing these penalties.

**Agency Response:** ANR does require significant monitoring of various permitted facility components but relies on the Permittee to retain the services of an **independent** contractor to conduct this work. ANR does not have the capability or capacity to complete the monitoring independently, all results are submitted to the Agency for review, consideration and approval. This process relies upon the professional accreditation of the consultants and laboratories to which samples are submitted and is standard practice throughout the United States. ANR does have the ability to be present during any of the sampling events and can collect split samples for independent analysis, to confirm the results provided by the independent contractor, if any concerning results were reported.

**Comment Received:** I am a resident of Newport. Vt., a city which accepts leachate from the Casella dump in Coventry into our city's waste management plant. The liquid portion of the "treated" waste (which has not been treated to remove pfas) is then dumped in Lake Memphremagog. The city's sources of drinking water are two wells which sit adjacent to the lake. The sludge component of waste is now returned to the dump. In the recent past it was sprayed on fields adjacent to the lake. The plan does not cover sampling this source of contamination.

**Agency Response:** Page 9 of the draft plan identifies the work that the Agency will be completing to investigate waste streams, including biosolids/sludges. Although the NEWSVT facility in Coventry was not specifically named in this section of the plan, it is one of the five landfills with leachate collection systems in Vermont and will be evaluated for PFAS within the leachate. The Newport wastewater treatment facility, and other wastewater treatment facilities accepting landfill leachate, will be being evaluated as well. ANR is also testing biosolids which are currently land applied as part of this work. ANR will learn more about this potential risk and the relationships between these various waste sources once this sampling regime is completed.

**Comment Received:** The effort to address concerns about PFAS contamination via S49 and the subsequent VTANR sampling plan for PFAS is commendable, in that Vermont is one of only eight states in the nation that has begun to seriously reckon with the environmental and public health threat



posed by this class of “forever” chemicals. That said, however, having read the plan I am concerned that the urgency required to effectively limit the potential and irreversible negative impact of PFAS on the Lake Memphremagog watershed is not reflected in the timelines or oversight capability outlined in the plan.

**Agency Response:** The Plan includes an aggressive sampling plan for landfill leachate, WWTF influent and effluent, surface water and biosolids, including those that may be impacting Lake Memphremagog. This extensive sampling will be completed in 2019 with a report which will include all the testing data that will be available in December 2019 for public review. This testing will inform ANR what additional actions should be taken to address this issue.

**Comment Received:** It is a well-understood fact worldwide that landfills and landfill leachate are a major source of PFAS contamination, in that household waste as well as industrial and demolition wastes include items manufactured with these chemicals, including flame retardant, stain retardant and waterproofing and non-stick surface chemicals. The lined and unlined landfill in Coventry has been a receptacle for these materials for decades.

**Agency Response:** ANR has required the NEWSVT facility to review, sample and evaluate PFAS concentrations in wastes that are currently disposed within the landfill. The wastes that are being evaluated are those that are suspected of having elevated PFAS concentrations due to the industrial uses of PFAS. This required sampling is intended to identify the highest potential sources of PFAS within the landfilled waste mass. The Plan does not include testing of common household products that may contain PFAS, but it is acknowledged that they are contributing to PFAS loading within the landfilled waste mass.

**Comment Received:** It is also acknowledged globally that science is not settled as to fully understanding the actions and interactions of these chemicals with each other and with elements of heat, water other chemical compounds in the landfill or WWTF environments. In reality, study of this class of PFAS chemicals is in its infancy as far as what remains to be learned and understood. Similarly, the testing and detection methods used to assess presence and concentrations of PFAS are also in flux and may not be reliable guidelines for determining real threats to human and environmental health.

**Agency Response:** As with any contaminant, our understanding about the fate, transport, and toxicity of PFAS will evolve over time. In recognition of this fact, Act 21 (S.49) directed ANR, on or before August 1, 2020, to initiate a public notice and comment process by publishing an advance notice of proposed rulemaking regarding the regulation under the Department of Environmental Conservation’s Water Supply Rule of per and polyfluoroalkyl (PFAS) compounds as a class or subclasses. Acknowledging that this developing work may impact our future understanding of PFAS contamination, the Agency is moving forward with the proposed sampling and evaluations utilizing our best current practices in order to enhance our understanding and decision making.

**Comment Received:** In reviewing the literature even in just the last decade, we see that the standards for maximum contamination levels continue to be downgraded, for example NJ and Minnesota have recently lowered their drinking-water standards to 13 and 15 ppt, lower than those set by Vermont at 20 ppt. It is not unreasonable to speculate that ultimately there will be no safe limit of exposure determined for humans, fauna or flora.

**Agency Response:** ANR will continue to work with the Vermont Department of Health to ensure the standards remain protective of public health. Additionally, Act 21 (S.49) has directed ANR to publish a plan for adopting ambient surface water quality standards for the (5) PFAS. These standards when adopted (1/2024 at the latest) will provide aquatic life criteria and human health criteria which will be protective of

aquatic biota and human health. The Human Health criteria will be protective of fish and water consumption and fish consumption only.

**Comment Received:** Further, according to the sampling plan, much remains to be known about the types and kinds of waste that has been and continues to be deposited in the Coventry landfill. The ANR continues to put the onus of responsibility for inspection and monitoring of the thousands of transport vehicles on the permittee, Casella, without evidence of effective oversight by the state to ensure the fidelity of that inspection and monitoring. What proof is offered, what oversight by DEC confirms findings?

**Agency Response:** As previously mentioned ANR has required the NEWSVT facility to review, sample and evaluate PFAS containing wastes that are disposed within the landfill. ANR is reviewing and approving this work, and the findings will inform future decisions regarding this potential risk. Generally, the ANR also does provide oversight on all waste accepted for disposal by the NEWSVT landfill and through rules and the certification conditions places restrictions on waste acceptance and management for the protection of public health, safety and the environment.

**Comment Received:** Another concern relates to the WWTF in Newport, which is not designed to meet current specifications for effective filtration, specs and technology and protocols that also continue to be refined and upgraded. Currently, reverse osmosis and nano-filtration are deemed to be most effective in removing the greater percentage of PFAS chemicals before release into the environment. Even GAC technology sufficient to begin to filter up to only 60% of PFAS far exceeds the GAC tech employed, to my understanding, in the WWTF in Newport. Even then, the problem presented by safe disposal of spent membranes, GAC and sludge remains, with the likelihood that these will be returned to the landfill only to leach back into the environment.

**Agency Response:** ANR has required the NEWSVT facility to evaluate landfill leachate treatment options other than the current, traditional treatment of leachate at wastewater treatment facilities. This includes evaluating both on-site and off-site treatment options. These evaluations are currently underway and as such they were not included in the proposed future work. The NEWSVT facility will be providing a report on this work to the Agency by October 15, 2019.

**Comment Received:** The greatest conundrum for me is, if the effort is to keep PFAS chemicals out of the environment by lining landfills, why on earth is it considered to be a good idea to take the landfill leachate, with measurable detections of many PFAS chemicals, all of which amounts must be aggregated as to whether they meet or exceed MCLs, and then dump them by the millions of gallons annually into the WWTF to go basically untreated into Lake Memphremagog?

**Agency Response:** As previously stated, the Plan includes an aggressive sampling plan for landfill leachate, WWTF influent and effluent, surface water and biosolids. This extensive sampling will be completed in 2019 with a report which will include all the testing data that will be available in December 2019 for public review. This testing will inform ANR what additional actions should be taken to address this potential concern.

**Comment Received:** We must be concerned for those who drink from the lake, mostly the hundreds of thousands of Canadians, but we must also be concerned for the flora and fauna that comprise the biosphere and the food chain, including humans who eat fish from the top of the chain. Are PFAS the new DET? Are we experiencing the new Silent Spring? History, common sense (if there is such a thing), and the precautionary principle adhered to universally by sound science require that we err on the side of caution. These chemicals do not biodegrade, endure in the environment and accumulate over time. What we learn in the coming years of study may in the end be “too

late” to do anything about. Our natural resource, our at least formerly pristine lake and its surrounds, will be lost to us.

**Agency Response:** The testing laid out in this Plan is designed to answer many of the questions and concerns expressed in this comment.

**Comment Received:** GLOBALFOUNDRIES supports the objectives of the PFAS sampling plan developed by the Agency of Natural Resources to complete a statewide investigation of potential sources of PFAS contamination. The DEC requested an investigation for PFAS contamination at the Global Foundries (formerly IBM) facility in Essex Junction. The investigation identified elevated levels of PFAS contamination in groundwater. The groundwater contamination is contained on site via pump and treat and the PFAS in water is removed before it is discharged to the Winooski River. No PFAS was detected in any of the drinking water wells sampled within a one-mile radius of the facility. This facility is conducting long term groundwater monitoring to ensure that public health and the environment is protected. Please include the following note in this section: Groundwater remediation and monitoring at this facility is owned and operated by IBM.

**Agency Response:** The report has been modified to indicate the groundwater remediation and monitoring at this facility is owned and operated by IBM.

**Comment Received:** The PFAS REPORT which at the outset states on p. 5: “PFAS in landfill leachate is pervasive and has been detected at significant concentrations with the potential for environmental impact.” This statement should be modified to read...with the potential for negative environmental and public health impact.

**Agency Response:** The report has been modified to indicate to add the statement recommended above, with *“the potential for negative environmental and public health impact.”*

**Comment Received:** I appreciate the Legislature’s awareness and concern for the potential for environmental and public health danger in having passed S-49. I would hope that ANR acts aggressively in limiting the potential for harm, caused by the unintended leakage of landfill leachate in Coventry, as proved by groundwater well tests showing PFAS exceedances down-gradient in at least one test well.

**Agency Response:** ANR required NEWSVT to conduct testing of groundwater in the vicinity of the landfill to test for PFAS related compounds, in addition to the regular groundwater monitoring that occurs to determine extent and degree of groundwater impact. Test results confirmed the lined landfill is meeting the Groundwater Protection Rule standards and that the liner is not leaking. The unlined portion of the landfill, constructed prior to the landfill liner requirements, is meeting the Groundwater Protection Rule standards at the points of compliance, prior to groundwater leaving the landfill property. NEWSVT is required to continue to monitor groundwater to ensure that groundwater standards are attained at the points of compliance for both the unlined and lined landfills. Corrective action would be required if this condition were to change or if any monitoring of the landfill infrastructure indicated that the landfill liner was compromised.

**Comment Received:** I am fully supportive of the thoughtful and compelling written comment submitted by Peg Stevens on ANR’s PFAS Report of June, 2019. I concur with her statement questioning the timeline and regulatory oversight as outlined for ANR. I write to encourage more aggressive oversight and a swifter timeline.

**Agency Response:** As previously mentioned, the Plan does include an aggressive sampling plan for landfill leachate, WWTF influent and effluent, surface water and biosolids. This extensive sampling will be completed in 2019 with a report which will include all the testing data that will be available in December 2019 for public review. This testing will inform ANR what additional actions should be taken to address this issue. Act 21 (S.49) lays an aggressive timeline for completing many PFAS related sampling activities, evaluations and determinations. The Agency fully intend to complete this work within the timeline of Act 21 (S.49), and, when possible, sooner than the requirements.

**Comment Received:** I am encouraged by and find merit in ANR’s on-going and comparative sampling study of PFAS concentrations of landfill leachate, p.9, first phase of which is to be completed by July 1, 2019. Results should be published and available to the public.

**Agency Response:** As a point of clarification, July 1, 2019 was the date that the DEC expected to finalize a contract with an environmental consultant to perform this sampling. The contract has been finalized. Sampling will be occurring over the coming months, and a report, including all the data, will be available in December 2019 for public review.

**Comment Received:** Under “Next Steps”, p. 11, what does the Legislature and ANR have in mind and plan to do for “best management practices for waste types identified as a concern” at the Coventry landfill? Please give examples of waste types and actions as a regulator.

**Agency Response:** As identified by the plan, some of the targeted waste streams that are currently being sampled are sludges, contaminated soils, construction and demolition debris (e.g. carpets, shingles), bulky wastes (e.g. mattresses, upholstered furniture) and food packing. The Agency can place limitations, management requirements and, if necessary, bans on waste materials of concern, such as has been done for electronic wastes, tires and others. The results of the waste materials sampling being completed along with the evaluation of landfill leachate, wastewater treatment facilities and leachate treatment options will inform any future regulatory actions.

**Comment received:** The Draft Plan should state that public water systems are required to use, at a minimum, EPA Method 537.1 for PFAS sampling required by December 1, 2019.

**Agency Response:** The report has been modified to state that public water systems are required to use, at a minimum, EPA Method 537.1 for PFAS sampling required by December 1, 2019.

**Comment received:** The Draft Plan should provide additional details regarding the public water system pilot project.

**Agency Response:** ANR does not have additional details at this time to add to the Plan. Once these plans are prepared, they will be made public via the ANR web page for public comment.

**Comment received:** The Draft Plan does not address all PFAS industrial sources in the State.

**Agency Response:** Since the discovery of PFAS contamination in Bennington in 2016 ANR has taken a systematic and strategic approach to identify and investigate sources of PFAS contamination that threaten

public health and the environment. ANR will continue to investigate industrial sources of PFAS contamination as we gather more information concerning these sources and what risk they pose to public health and the environment. ANR has prioritized the potential PFAS sources and sensitive receptors (like school wells) to begin our investigation into potential PFAS sources and impacts. As higher potential risk sources are investigated, ANR will continue to look at other lower risk potential sources as ANR resources allow.

**Comment received: The Draft Plan should provide additional details regarding the investigation of electroplating facilities as a potential source of PFAS.**

**Agency Response:** ANR does not have additional details at this time to add to the Plan. ANR is working on finalizing the details of the sampling strategy. Once the sampling strategy is completed, sampling for PFAS at electroplating facilities will commence. ANR will be focused on testing electroplating facilities that pose the greatest risk to public health. The testing will determine if PFAS contamination from these facilities exist and whether or not it is present in drinking water. From this initial testing ANR will also have a better understanding of the overall risk electroplating facilities pose and what additional testing will be needed at other facilities. We plan to complete the high priority testing by the end of September 2019. We anticipate evaluating the information and commencing phase two by November 2019 but that date may shift based on the results of the first phase.

**Comment received: The Draft Plan does not address all intensive PFAS use in the State.**

**Agency Response:** Since the discovery of PFAS contamination in Bennington in 2016 ANR has taken a systematic and strategic approach to identify and investigate sources of PFAS contamination that threaten public health and the environment. ANR will continue to investigate intensive use sources of PFAS contamination as we gather more information concerning these sources and what risk they pose to public health and the environment. ANR has prioritized the potential PFAS sources and sensitive receptors (like school wells) to begin our investigation into potential PFAS sources and impacts. As higher potential risk sources are investigated, ANR will continue to look at other lower risk potential sources as ANR resources allow.

**Comment received: The Draft Plan should provide additional details regarding the investigation of car washes as a potential source of PFAS.**

**Agency Response:** ANR does not have additional details at this time to add to the Plan. ANR is working on finalizing the details of the sampling strategy. Once the sampling strategy is completed, sampling for PFAS at car washes will commence. ANR will be focused on testing car washes that pose the greatest risk to public health. The testing will determine if PFAS contamination from these facilities exist and whether or not it is present in drinking water. From this initial testing ANR will also have a better understanding of the overall risk car washes pose and what additional testing will be needed at other facilities. We plan to complete the high priority testing by the end of September 2019. We anticipate evaluating the information and commencing phase two by November 2019 but that date may shift based on the results of the first phase.

**Comment received: The Draft Plan should include a proposed sampling plan for wastewater and sludge from paper mills and facilities that recycle paper.**

**Agency Response:** The PFAS sampling of waste streams identified in the “PFAS in Waste Streams” section on page 9 of the plan, does identify sludge sampling and effluent sampling of facilities with potential

industrial sources of PFAS. This sampling does include the discharges and sludges from the paper industry and the report has been modified accordingly.

**Comment received: The Draft Plan should provide additional details regarding surface water sampling near wastewater treatment facilities.**

**Agency Response:** A brief discussion concerning the development of surface water criteria is discussed in the Plan. A plan for public review and comment is due on January 15, 2020 and will include details regarding the surface water sampling being proposed, including locations near WWTFs. In addition, listed on page 9 of the draft Plan, surface water sampling will occur up and downstream of the Montpelier WWTF.

**Comment received: The Draft Plan should provide additional details regarding the investigation of land application sites as a potential source of PFAS contamination.**

**Agency Response:** ANR does not have additional details at this time to add to the Plan. ANR is working on finalizing the details of the sampling strategy. Once the sampling strategy is completed, sampling for PFAS at land application sites will commence.

**Comment received: The Draft Plan should describe what steps the Agency is taking to determine what levels of PFAS in soils and biosolids pose a risk to drinking water supplies.**

**Agency Response:** As previously stated, the Plan includes an aggressive sampling plan for landfill leachate, WWTF influent and effluent, surface water and biosolids. This extensive sampling will be completed in 2019 with a report which will include all the testing data that will be available in December 2019 for public review. This testing will inform ANR what additional actions should be taken to address this issue. The Environmental Protection Agency, Office of Research and Development, as well as several educational facilities, are undertaking the complex research of determining what levels of PFAS in soils and biosolids pose a risk to groundwater and thereby drinking water supplies. ANR will continue to track this research to see how this information can be applied to state regulations.