Saratoga Sites Against Norlite Emissions
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September 8, 2020

Sean Mahar, Chief of Staff
NY Department of Environmental Conservation
290 Broadway
New York, NY 12233

Sent Via Email to: Sean.Mahar@dec.ny.gov

Dear Mr. Mahar and NY Department of Environmental Conservation and NY Health Department Colleagues:

Executive summary:

Thank you for meeting with our group of concerned citizens and scientists regarding Norlite, LLC on September 4, 2020. While we applaud your decision to conduct environmental testing around Norlite, we request information, clarification, and improvements to your study design. This letter summarizes those requests.

First, these requests should in no way suggest that we want the NY Department of Environmental Conservation (DEC) to delay sampling. The DEC announced this study on July 24, 2020. We immediately asked to meet with the agency about the contours of the study, but the DEC failed to meet with us until six weeks later on September 4, 2020. We understand that study design takes time, and appreciated that meeting. We have worked over the holiday weekend to provide comments by your next business day. We believe that the DEC should start sampling immediately and work contemporaneously with our team to outline the analysis of additional PFAS and toxic organic compounds (as detailed below). Our requests should not delay your sampling work.

Briefly, our group remains concerned about the following:

1. Norlite will be compared to the Patroon Creek in Albany, NY. The Patroon Creek has a long history of pollution, and is a poor sole control site – you must include comparable testing from clean, non-Superfund sites.
2. The proposed environmental testing does not include important combustion related toxic pollutants and you should expand the list of PFAS compounds to be analyzed. We seek clarification on the use of EPA 537.1 on solids (e.g., soil), and note that newer, more comprehensive, solid sample compatible PFAS assays are available. Testing must include additional classes of toxic compounds emitted by Norlite (e.g., dioxins, furans, PCBs).
3. Biological testing may yield complementary information and is a direct indicator of human exposure. You have stated this would fall under the purview of the New York State Department of Health (NY DOH), your sister agency. For reasons cited below, we urge you to coordinate with NY DOH to conduct such testing immediately, rather than in response to environmental testing. At a minimum, NY DOH should offer the residents of

Saratoga sites and nearby residents blood and hair sampling and testing - similar to the tests that NY DOH conducted in Hoosick Falls and Petersburg, New York.

We discuss these topics in more detail below. We seek detailed responses to and/or further discussion of each of these topics at your earliest convenience, but no later than September 11, 2020.

Specific Concerns:

DEC named the Patroon Creek in the city of Albany as the sole site to which levels of PFAS and other contaminants of concern found around Norlite would be compared. Though DEC may gain some information from a comparison of Norlite contaminant levels to those of the Patroon Creek, several disadvantages warrant augmenting the control site testing strategy. First, the Patroon Creek is an EPA Superfund Site. NL Industries and Mercury Refining Company polluted the Patroon Creek for decades. DEC must include at least one additional pristine site to avoid potential misinterpretation of the data. Second, we need more information about the proposed sampling locations along the Patroon Creek. Specifically, although DEC mentioned up/downstream testing, the sampling site locations are of concern. DEC must include samples upstream of the unnamed tributary. Even with upstream sampling, the Patroon Creek remains fraught with the potential for contamination from smoke stacks and spills from the above-named polluting facilities and many additional industrial sites nearby. For these reasons, we urge DEC to conduct testing at additional uncontaminated control sites.

Testing was also discussed at length. We applaud the inclusion of a broad survey of toxic metals and testing for per and polyfluoroalkyl substances (PFAS). However, EPA method 537.1 tests for limited PFAS species and any study of Norlite's environmental and public health impact would be flawed without a careful and comprehensive analysis of other toxic compounds known to be present in Norlite's emissions. Regarding PFAS testing, we note that PFBA and PFPeA, compounds found in Bennington College's sampling near Norlite and of interest as AFFF fingerprints, are missing from the EPA 537.1 protocol (Attachment 1, red font). Newer validated assays detect a broader range of PFAS compounds, including PFBA and PFPeA and other fingerprints of AFFF absent from EPA 537.1. DEC must test for, identify, and quantify more PFAS compounds, e.g., use MLA-110, ASTM D7979 or, minimally, add EPA 533 to EPA 537.1 (attachment 1). In addition to metals and PFAS, DEC must assess a comprehensive panel of products of incomplete combustion and persistent organic pollutants. Specifically, Norlite has violated the Clean Air Act for decades, and, in addition to current target analytes, has emitted (and paid fines for emitting) dioxins and furans, which are some of the most toxic compounds known. Considering the upcoming Title V facility permit application process, DEC must include additional contaminants beyond metals and PFAS to make an informed decision regarding future operations and oversight at the Norlite facility.

At the September 4th meeting, we again raised the issue of human biological testing. It is our understanding that DEC's present position is to take a wait-and-see approach on additional testing, depending on the results of soil testing at Saratoga Sites and nearby areas. The science suggests testing of human subjects may reveal exposures that limited environmental sampling could miss. Specifically, many Norlite-emitted toxic compounds and chemicals of emerging concern are known to bioaccumulate and biomagnify. In the event of low and/or transient pollution of the nearby water and soil, human exposure may provide a more durable indicator of past Norlite emissions and human health concerns. We request that DEC reverse its current position on

biological testing and coordinate with its sister agency, NY Department of Health, to undertake blood and hair testing immediately. For additional information, please reference attachment 2.

Concluding Remarks:

We eagerly await your reply to our concerns. We are committed to working collaboratively with DEC to enhance the results and conclusions of the current study. We have extensively researched our areas of concern, and can share specific testing protocols and evidence supporting our claims if needed. However, this exchange should not delay the study in any way. Considering the impending actions regarding Norlite specifically and PFAS incineration in NY – e.g., Norlite's Title V Permit Application, the Albany County Clean Air Act awaiting County Executive Dan McCoy's signature, and the unanimously passed McDonald Breslin Bill awaiting Governor Cuomo's signature – DEC must respond immediately. Please contact Joe Ritchie to schedule a time to meet this week. Thank you for your consideration.

Sincerely,

Chris Sevinsky, PhD

Joe Ritchie, Executive Director, Saratoga Sites Against Norlite Emissions

Diana Abadie, MS

David Bond, PhD, Bennington College

David Carpenter, MD

Kevin Costello, MD, MPH

Judith Enck, Former US Environmental Protection Agency, Regional Administrator

Alexis Goldsmith, Program Coordinator, Sanctuary for Independent Media

David Walker, PhD

Cc: Gary Ginsberg, NY State Health Department; Assembly member John McDonald; Senator Neil Breslin; Ali Zaidi, Deputy Secretary for the Environment, Governor's Office, Cohoes Mayor William Keeler

Attachment 1 – comparison of PFAS test methods 110, 533 and 537.1:

Analyte (Short Name)	Method 110	Method 533	Method 537.1
Perfluorobutanoate (PFBA)*	x	x	No*
Perfluoropentanoate (PFPeA)*	x	x	No*
Perfluorohexanoate (PFHxA)	x	x	x
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	x	x	
Perfluoroheptanoate (PFHpA)	x	x	x
Perfluorooctanoate (PFOA)	x	x	x
Perfluorononanoate (PFNA)	x	x	x
Perfluorodecanoate (PFDA)	x	x	x
Perfluoroundecanoate (PFUnA)	x	x	x
Perfluorododecanoate (PFDoA)	x	x	x
Perfluorotridecanoate (PFTrDA)	x		x
Perfluorotetradecanoate (PFTeDA) (PFTA ?)	x		x
Perfluorobutanesulfonate (PFBS)	x	x	x
Perfluoropentanesulfonate (PFPeS)	x	x	
Perfluorohexanesulfonate (PFHxS)	x	x	x
Perfluoro-4-methoxybutanoic acid (PFMBA)	x	x	
Perfluoroheptanesulfonate (PFHpS)	x	x	
Perfluorooctanesulfonate (PFOS)	x	x	x
Perfluorononanesulfonate (PFNS)	x		
Perfluorodecanesulfonate (PFDS)	x		
Perfluorododecanesulfonate (PFDoS)	x		
4:2 fluorotelomersulfonate (4:2 FTS)	x	x	
6:2 fluorotelomersulfonate (6:2 FTS)	x	x	
8:2 fluorotelomersulfonate (8:2 FTS)	x	x	
N-Methylperfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	x		x
N-Methylperfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	x		x
Perfluorooctanesulfonamide (PFOSA), a.k.a FOSA	x		
N-Methylperfluorooctanesulfonamide (N-MeFOSA)	x		
N-Ethylperfluorooctanesulfonamide (N-EtFOSA)	x		
N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	x		
N-Ethylperfluorooctanesulfonamidoethanol (N-EtFOSE)	x		
Perfluoro-2-propoxypropanoate (HFPO-DA)	x	x	x
4-dioxa-3H-perfluorononanoate (ADONA)	x	x	x

9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	x	x	x
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	x	x	x
3-Perfluoropropyl Propanoic Acid (3:3 FTCA)	x		
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	x		
3-Perfluoroheptyl propanoic acid (7:3 FTCA)	x		
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	x	x	
Perfluoro-3-methoxypropanoic acid (PFMPA)	x	x	
Perfluoro-4-methoxybutanoic acid (PFMBA)	x	x	
Nonafluoro-3,6-dioxaheptanoic acid (NFDA)	x	x	
Total	40	25	18
Green - Bennington College (+) environmental samples			
* Compounds found in Bennington College Samples at higher levels close to Norlite			

Attachment 2 - 03Sep2020 letter to DEC

Norlite Environmental and Biological Sampling: memo consequent on August DEC/DOH meeting Drs. David Carpenter, Kevin Costello, David Walker and Ms. Diana Abadie met with Mr. Sean Mahar and several DEC and DOH scientists on August 11, 2020. Dr. Chris Sevinsky was unable to attend but contributed to the language in the memo. Biomonitoring of the residents of Saratoga Sites was discussed. Our citizen scientist group is planning such testing and we wish to design our plan to minimize duplication of efforts. We were delighted to hear confirmation that DEC has reversed its strongly stated position this spring that there is no need for PFAS testing because they felt that the Bennington results scarcely exceed background levels. PFAS testing of surface water and soils around Norlite will now be undertaken by the DEC. However, Mr. Mahar stated that no biological samples (e.g., blood serum) would be collected for PFAS analysis by DEC/DOH at this time. Rather, PFAS testing of Cohoes residents would be contingent on environmental testing of surface water and soil samples actually demonstrating elevated levels of PFAS. We applaud the DEC/DOH for confirming their new environmental testing plans. But we have four areas of residual concern.

First and most importantly, environmental protection is about protection of the people who inhabit the environment. The miners are the first priority, not the canaries or the coal. Water and soil testing is certainly useful as a proxy for establishing potential levels and patterns to which humans may be exposed. But primary exposure may be from inhaling airborne emissions from the Norlite stacks rather than from people drinking surface water or eating soil. And the emissions cannot be sampled retroactively. Biological testing of Saratoga Sites and other residents living in the shadow of Norlite would provide much needed orthogonal data to elaborate a complete picture of local exposure of the people who may need protection. Residents of Saratoga Sites should be tested now for PFAS contamination signatures in blood serum samples before those signatures decay

naturally by metabolic elimination on a few year time scale. Waiting for the DEC's environmental findings could, in addition, be detrimental to both physical and mental health of the population involved. Given the poorly understood nature of contaminant deposition and distribution from incineration, environmental soil and water testing alone may not reflect actual exposures affecting humans unless there is complementary biological testing of the humans. These considerations reinforce our determination to start a program of biomonitoring in this community if the DEC/DOH will not.

Second, we learned that the DEC/DOH would use a PFAS method of approximately 20 analytes for their environmental sampling. State of the art testing can include 40 analytes. What short chained analytes will be included in the DEC/DOH's list? Naturally, Saratoga Site and other residents are concerned with everything they may have been exposed to by the incomplete destruction of PFAS-containing firefighting foams in the Norlite kilns. Currently, no consensus exists on proper PFAS disposal by incineration. The Norlite expanded shale aggregate manufacturing process typically operates at less than 1000 C. Therefore, kiln temperatures are unlikely to have reached the 1400 C or greater thought to be needed for PFAS destruction. We urge DEC/DOH to expand the perfluorinated acids list to include the following as part of their analyte list: shorter chain (4-12 (per incomplete combustion)) analytes; additional multiple polyfluorinated precursors representative of legacy and current chemistry including perfluorinated sulfonamides and fluorotelomer sulfonates; and multiple ether-PFAS that have replaced PFOS/PFOA in manufacturing.

Third, we ask the DEC/DOH engage with us regarding planned testing protocols and evaluation criteria. We may be able to learn from each other. Testing site selection is a concern for both water and soil samples. The DEC did not disclose all proposed testing sites, indicating some sites have not been approved. While testing closer to Albany and within an undisclosed radius to Norlite was described, Patroon Creek was the only site informally disclosed as a PFAS uncontaminated control site for comparison. This creek has a long history of pollution (e.g., a former superfund site). We recommend the selection of additional, uncontaminated, control sites to provide background comparators less likely to be affected by past industrial contamination. Our group will be happy to share advice on such possible suitable background test sites.

Fourth, Norlite is a serial violator of the US Clean Air Act. Therefore, DEC should test for additional contaminants including dioxins, furans, and heavy metals. Norlite's infractions include, but are not limited to, a May 21, 2020 EPA announced resolution of hazardous waste incinerator violations by Norlite LLC. The charges resolved go back to operations in the years 2012-2014 with initial flagging of the violations done in 2015. On the two most serious complaints, both kilns operated by Norlite at Cohoes for hazardous waste incineration were out of compliance with the Clean Air Act for most of 2012-2014. What are these violations and why do they matter? The two most serious infractions relate to failures to comply with maximum achievable control technology (MACT) compliance with the Clean Air. Norlite LLC failed to cool exhaust gases below the maximum allowed exit temperature of 436 F. This matters because emission of extremely toxic dioxins and furans increases with exhaust temperature of combustion of hazardous waste streams*. This critical safety and environmental protection operating parameter was out of compliance for both kilns for most of the period in question - multiple years. These were not occasional failures related to special circumstances. This was standard operating procedure. Additional Norlite failures beyond the scope to the EPA complaint have been documented. The second operational failure at Norlite was also standard operating procedure. Venturi scrubber

fluid reservoir levels were insufficient to achieve pressure drop requirements, and Norlite failed to renew scrubbing solution at the rate required to maintain necessary scrubber/gas ratio for effective exhaust contaminant removal. This matters because the scrubbers remove particulates, hydrochloric acid, chlorine gas, and toxic metals like mercury, lead, arsenic, chromium, and beryllium from emissions. The DEC/DOH mandate is to protect citizens, not a waste disposal corporation with a documented history of environmental, occupational, and public health safety violations. Given what we know about Norlite, this can only be accomplished by careful testing of both the environment and nearby residents for a broad spectrum of PFAS, dioxins, furans, and toxic metals that have been emanating from Norlite's smoke stacks for far too long.

Respectively yours,

Kevin Costello, MD, MPH

David Carpenter, MD

Diana Abadie, MS

David Walker, PhD

Chris Sevinsky, PhD

* Plastic-bearing removed for clarification