MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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Subject:	Disposition of Public Hearing Requests, AdvanSix Resins and Chemicals LLC - Hopewell Draft Article 1 Federal Operating Permit PRO-50232 Renewal
To:	James Golden, Director of Central Operations
Through:	Michael Dowd, Director, Air and Renewable Energy Division Dowd Michael iru64073 Digitally signed by: Dowd Michael iru64073 DN: CN = Dowd Michael iru64073 OU = COV-Users, End-Users, DEQ Date: 2024.03.27 08:55:30 -04'00'
From:	James E. Kyle, Air Permit Manager, DEQ Piedmont Regional Office
Date:	March 26, 2024

Proposed Permit Action: Renewal of Article 1 Federal Operating Permit PRO-50232

Permittee: AdvanSix Resins and Chemicals LLC – Hopewell (AdvanSix)

Background:
AdvanSix is located at 905 E. Randolph Road, Hopewell, Virginia, and is classified as a major source of air pollution. The Hopewell facility includes nine major chemical process areas, a powerhouse, and a marine terminal for transfer of fuel and bulk materials. Caprolactam is the primary product manufactured at the facility. Co-products include ammonium sulfate, adipic acid, cyclohexanol, cyclohexanol, and oximes chemicals. Major raw materials at the site include phenol, natural gas for the production of ammonia, and sulfur for the production of oleum.

Preparation of Draft Permit:
AdvanSix has applied for the renewal of its Title V permit to incorporate all of the requirements that apply to the source into one document, including conditions from previously issued minor new source review permits, the terms of a 2013 Environmental Protection Agency (EPA) Consent Decree, a 1996 Consent Agreement establishing Reasonably Available Control Technology (RACT) for VOC, and other applicable state and federal rules.

DEQ received the Title V renewal application in February 2019 (technically complete in August 2023). The purpose of this permit action is the issuance of a renewal Article 1 Federal Operating Permit (hereafter referred to as the draft permit or permit action).

Public Notice Publication:
The public notice regarding the draft permit, which notified the local community about the public comment period, was published by the Department of Environmental Quality (DEQ) in *The Progress-Index* on January 12, 2024. The notice was also distributed to e-mail and postal mail lists which include several environmental organizations and other members of the public who have expressed interest in receiving such notices. The public notice, draft permit, and Statement of Legal and Factual Basis (SLFB)[1] were posted on the DEQ website for the duration of the comment period, which ended on February 26, 2024, after an extension was granted in response to a request by Southern Environmental Law Center. A public notice for the extension of the public comment period was published in *The Progress-Index* on February 13, 2024.

Summary of Public Hearing Requests:
Three commenters (two individuals and one group of environmental organizations, including Southern Environmental Law Center; Hopewell-Colonial Heights NAACP (Unit #7078); Sierra Club, Falls of the James Group; Virginia Interfaith Power & Light; and Chesapeake Bay Foundation (SELC *et al*)) submitted concerns during the public comment period and requested a public hearing. Below, the comments are summarized in **bold**, each followed by DEQ's response in *italics.*

The two individual commenters requested that a public hearing be held because of concern about the facility's release of air pollutants, as well as the facility's ongoing compliance issues. The commenters also stated that a public hearing should be held because of environmental justice impacts on the community surrounding the facility as well as to enhance public participation in the regulatory and permitting process. The commenters also indicated that they would greatly appreciate more information regarding the draft permit's alignment with EPA's recently updated standards for PM2.5.

The group of environmental organizations (SELC *et al*) also commented (In Section VI of the comments letter):

Our five organizations request a public hearing so that DEQ hears directly from affected community members along with other members of the public. Under the Virginia Environmental Justice Act, affected community residents must "have access and opportunities to participate in the full cycle of the decision-making process about a proposed activity that will affect their environment or health." Decision-makers must "seek out and consider" the participation of affected community members, "allowing the views and perspectives of community residents to shape and influence the decision."

[T]he AdvanSix facility is located in an environmental justice community, in close proximity to residents and to several other major sources of air pollution; it is one of Virginia's largest emitters of nitrogen oxides and other pollutants; and it has a long history of noncompliance with federal and state air regulations. By failing to ensure the facility's future compliance with such regulations, an inadequate Title V permit directly and adversely affects the air quality, health, and safety of local residents in particular and of Virginians more broadly-interests that are represented by [SELC *et al*].

[1] A statement of legal and factual basis must accompany a draft Title V permit according to 9VAC5-80-150 F. This document is sometimes simply referred to as the Statement of Basis or SOB.

In regard to the recently strengthened annual $PM_{2.5}$ standard, which reduced the National Ambient Air Quality Standard (NAAQS) from 12 micrograms $PM_{2.5}$ per cubic meter to 9 micrograms $PM_{2.5}$ per cubic meter, the Hopewell area already meets the more stringent $PM_{2.5}$ NAAQS.

With respect to concerns about the facility's release of air pollutants emissions and ongoing compliance issues, the following information should be noted:

- *Actual annual emissions from the facility have significantly decreased (by 5,064 tons per year nitrogen oxides, 183.6 tons per year volatile organic compounds, and 100.8 tons per year PM_{10}) since the previous Title V renewal was issued in 2014 (based on the 2022 emissions inventory).*
- *These reductions do not include the decrease in emissions resulting from the shutdown of a coal-fired facility (City Point Energy Center, LLC, or CPEC) that previously supplied process steam to the AdvanSix plant. During its last full year of operation (2018), CPEC emitted more than 1,500 tons of sulfur dioxide and nearly 1,000 tons of nitrogen oxides. AdvanSix has replaced this steam generating capacity by adding natural gas-fired boilers. Combined annual emissions from all of the AdvanSix powerhouse boilers for 2022 were 1.1 ton sulfur dioxide and 76 tons nitrogen oxides.*
- *The draft permit is <u>designed</u> to <u>identify</u> all applicable air pollution requirements that apply to AdvanSix and to include enforceable monitoring and enforceable compliance mechanisms to ensure that any deviations from the permit conditions are identified and corrected promptly.*

It is important to note that the Title V permit program is significantly different from the new source review and state operating air permit programs, which establish emission limits and other operational requirements on facilities. The purpose of a Title V permit is to incorporate all applicable federal requirements for a single stationary source into one document. Such requirements may include previously issued major and minor new source review conditions and applicable state and federal rules. Accordingly, a Title V permit does not authorize the installation, construction, or modification of emission sources, but rather consists of applicable federal requirements to which the source is subject. This draft permit does not authorize AdvanSix to construct or modify any emissions unit. Having all the facility's requirements in one document clarifies for the stationary source, regulatory agencies, and the public, all the applicable federal requirements the facility is legally obligated to meet. DEQ, as well as other EPA-authorized state, local, or tribal regulatory agencies, are limited in the types of changes that can be implemented when issuing, reissuing, or modifying a Title V permit. There is no opportunity in the Title V permit process to create new applicable requirements, such as emission limits, fuel restrictions, closure schedules, or to consider less-polluting alternative processes.

DEQ established an Office of Environmental Justice (OEJ) in April 2021 to support the agency and its program areas in the implementation of Virginia's Environmental Justice Act (VEJA). DEQ's OEJ is continually developing and building agency and community relationships, with a focus on environmental justice and fenceline communities. Notwithstanding that DEQ's implementation of VEJA remains a work in progress, DEQ strives to promote fair treatment and meaningful involvement for all permit actions.

The issuance of a Title V permit is subject to public participation requirements. In this case, all public participation mandated by law and regulation, including specific advertisement in the city where the facility is located, as well as an extension to the comment period beyond the statutory requirement, has been performed for the draft permit. In addition, the draft permit addresses all applicable federal requirements in effect for the facility as indicated in the SLFB. VEJA focuses environmental justice efforts on fenceline

communities. DEQ OEJ sent out an email notification regarding the public comment period for the Title V air permit on January 19, 2024. This email was sent to individuals who recorded their name on the sign-in sheet from the public meeting for AdvanSix's Virginia Pollutant Discharge Elimination System (VPDES) water permit, which was held in September 2023.

Therefore, due to the nature of the Title V permit program and the fact that the issuance of this draft permit will not affect or change any of the facility's underlying existing permits, emission limits or other operational requirements, DEQ believes that additional public engagement pursuant to VEJA is not required and would not be beneficial at this time.

In addition to requesting a public hearing, SELC *et al.* submitted the following comments in support of that request. The comments are in **bold**, with DEQ's responses following in *italics*. The entire letter is attached to this memorandum for reference.

Section I – The AdvanSix permit warrants DEQ's special consideration for its potential impacts on an environmental justice community that already bears a significant pollution burden.

From Section I, Paragraph 6 of *SELC et al:* The AdvanSix permit warrants DEQ's special consideration for its potential impacts on an environmental justice community that already bears a significant pollution burden. DEQ must consider the AdvanSix facility's effects in combination with the other environmental stressors affecting the residence of Hopewell – in particular, community members' exposure to pollution from five other major sources of pollution. DEQ must evaluate the degree to which such cumulative impacts could amplify the impacts of this permitting action on the Hopewell community.

Please see the previous response addressing environmental justice concerns. Additionally, "this permitting action" itself does not result in an increase in emissions or allow any new impacts on the Hopewell community. A multi-source impacts analysis may be required under NSR permitting, but such an analysis is not part of the Title V permitting process.

Section II – AdvanSix's application and the draft statement of basis omit emission data and other requisite information.

A. AdvanSix's Title V permit application is incomplete without potential emission calculations.

From Section II.A – Paragraphs 1 & 2 of *SELC et al:*

As part of the requisite permit application materials, Title V permit applications must include estimates of potential emissions as well as the calculations used to generate those estimates. This information is vital to public participation because emission estimates determine which applicable requirements apply to individual units or to the facility as a whole, and this data informs the adequacy of the permit's monitoring, recordkeeping, and reporting requirements. AdvanSix's Title V permit application is wholly devoid of this requisite and essential emissions information.

Specifically, Title V permit applications "may not omit information needed to determine the applicability of, or to impose, any applicable requirement." This information includes potential emissions estimates; specifically, 40 CFR §70.5(c)(3)(i) requires the disclosure of "[a]ll emissions of pollutants for which the source is major, and all emissions of regulated air pollutants." Further, this calculation of emissions must be made on a unit-by-unit basis. The Title V rules further require

submission of "[e]missions rate in tpy [tons per year] and in such terms as are necessary to establish compliance consistent with the applicable standard reference test method." Finally, the application must include the "[c]alculations on which the [foregoing emissions information] is based.

From Section II.A Paragraph 5 of *SELC et al (first comment):*
[W]hile the draft statement of basis does list 2022 facility-wide actual emissions for some pollutants, *actual* emissions are not the same as potential emissions for the purposes of assessing applicable regulatory requirements, and a tabulation of facility-wide emissions does not allow the public to assess applicable requirements and monitoring conditions, which often apply to a defined area of the facility on a process unit-by-unit basis.

In listing required permit application information, 9VAC5-80-90 D states that "emission-related information as follows shall be included."

1.All emissions of pollutants for which the source is major and all emissions of regulated air pollutants.

9VAC5-80-90 D.1.a (2) states that "the emissions from any emissions unit shall be included in the permit application if the omission of those emission units from the application would interfere with the determination of the applicability of [Title V permitting], the determination or imposition of any applicable requirement, or the calculation of permit fees." 9VAC5-80-90 D.1.b states that "emissions shall be calculated as required in the permit application form or instructions."

At this time, the facility is considered major for all regulated criteria pollutants emitted by the facility: NOx, CO, VOC, SO_2, PM_{10}, and $PM_{2.5}$. Additionally, the facility is major for Hazardous Air Pollutants (HAP). All applicable federal standards for major sources apply. The facility is not major for sulfuric acid mist, which is a regulated air pollutant, but there are no federal standards for major sources of sulfuric acid mist that are potentially applicable. The comment does not identify any possible applicable requirements that are not in the Title V permit.

On page 12 of the application form, the application gives the facility the option to check the statement that says, "I have reviewed my Calendar Year 20_ emissions update and find that it properly accounts for all emission units except those specified below." In the updated application dated May 18, 2023, this box was checked, indicating that the 2021 emissions update was accurate (the 2022 emissions inventory had not been finalized as of May 18, 2023). The emissions update provides actual annual emissions calculations and were included by cross-reference in AdvanSix's renewal application.

Additionally, page 13 requires the permittee to list all pollutants for which the source is major. The instructions state, "EPA's White Paper II, to which the DEQ subscribes as a matter of policy, allows sources to stipulate that they are major sources as a means of streamlining the application process. When stipulating, sources need not demonstrate the applicability of the Title V rule, such as by indicating the quantity of annual pollutant emissions."

Section II.D of the EPA guidance document (White Paper Number 2 for Improved Implementation of the Part 70 Operating Permits Program, dated March 5, 1996) goes on to say, "White Paper Number 2 clarifies that for applicability purposes, a source familiar to the permitting authority may simply stipulate in its application that it is major or that Federal requirements apply as specified in the application. The paper

clarifies that there is no need to prepare and submit extensive information about the source that 'proves' it is subject to any requirements that it stipulates are applicable."

Because the facility has stipulated that it is major for NOx, CO, VOC, SO_2, PM_{10}, and $PM_{2.5}$, as well as for HAP emissions, and has further stipulated to applicable federal requirements for major sources, as detailed in the application, extensive PTE calculations are not necessary for applicability purposes.

Potential to emit for individual emissions units can be found in the permit, since PTE is defined by the emission limits listed in the permit.

From Section II.A Paragraph 3 of *SELC et al:*

EPA has objected to Title V permits when potential to emit calculations were not included in Title V applications. In Cash Creek Generation, LLC, the applicant failed to include emissions estimates for fugitives in its Title V application; even though the applicant provided this information after the close of the comment period, EPA still objected on the grounds that the original omission of this information rendered public participation impossible.

The permit cited, (Cash Creek Generation, LLC , KADQ Permit #V-07-17) was a "merged CAA prevention of significant deterioration (PSD) construction permit and CAA Title V operating permit." The permit was for a new nominal 770 megawatt (MW) electric generating facility. Because it was for a new stationary source, this particular permit action included initial determinations under the New Source Review program, which requires, among other things, a top-down BACT determination for each pollutant with emissions exceeding the PSD significance levels. For this type of analysis, emissions calculations, including fugitive emissions calculations, must be included in the NSR application. Additionally, in this case, the fugitive emissions that had been omitted affected the major source determination, making the difference between finding Cash Creek Generation, LLC to be a major source of VOC/HAP or a minor source of those pollutants.

However, Virginia does not issue this type of "merged" permit. The draft AdvanSix Title V renewal falls entirely under 9VAC5-80 Chapter 1 (Federal Operating Permits), and incorporates all previously established applicable requirements, including those in existing minor NSR permits, Consent Orders and Agreements, and the provisions of other federal and state rules, into a single document. According to EPA's White Paper Number 2, emissions calculations are not required for applicability purposes when the facility has already stipulated to being a major source and subject to Title V and other Federal major source requirements, including those for major HAP sources.

From Section II.A Paragraph 5 of *SELC et al* (second comment):

[T]he table in the statement of basis is incomplete; for instance, it does not list sulfuric acid mist emissions (a pollutant subject to Prevention of Significant Deterioration ("PSD") applicability thresholds), despite the fact that units at the facility can emit sulfuric acid mist.

The actual sulfuric acid mist emissions for 2022 (5.55 tons) have been added to the table on Page 5 of the SLFB.

From Section II.A Paragraphs 6 & 7 of *SELC et al*

DEQ did belatedly produce tables of emission estimates from recent New Source Review ("NSR") permit applications in response to a Virginia Freedom of Information Act ("FOIA") request by SELC. However, these emission tables were not included in AdvanSix's Title V renewal application, meaning the Title V application is still incomplete. It is impossible for the public to know whether any of these calculations are still accurate in 2024. Additionally, these tables do not provide adequate information on how the emissions were calculated, as required by the Part 70 rules. In particular, these tables do not set out how various emission factors used in the estimates were sourced or derived, preventing the public from assessing the representativeness or accuracy of the calculations.

Simply stated, DEQ must require a complete permit application – including detailed potential to emit estimates and the underlying calculations – and must make the complete application available to the public for the entire comment period. That has not happened here. DEQ must hold a new public comment period once AdvanSix has submitted a complete Title V renewal application.

DEQ provided the referenced emissions estimates tables in response to a FOIA request for records related to NSR permits issued in 2018 and 2022 when it was recognized that they had been inadvertently omitted from SELC's November 2023 FOIA request. These calculations pertained only to emissions from the projects permitted in 2018 and 2022 and are not part of the Title V permit application. As previously stated, detailed potential to emit estimates and the underlying calculations are not required when the facility has stipulated that it is a major source subject to Title V permitting and to other Federal major source requirements.

B. The lack of emissions calculations renders meaningful public participation impossible.

From Section II.B, Paragraph 1 of *SELC et al:*

Understanding potential emissions on a process unit-by-unit basis is a critical part of assessing the adequacy of AdvanSix's draft Title V permit. Emissions calculations are necessary to assess compliance with regulatory obligations and permit limits and to evaluate monitoring, recordkeeping, and reporting requirements. For example, if AdvanSix calculates that a given process unit has the potential to emit volatile organic compounds ("VOCs") at 95% of a permit limit (i.e., a Best Available Control Technology ("BACT") limit or a potential to emit limit), commenters can identify this unit as needing additional monitoring to assure compliance with the limit, given the small margin of compliance. This is especially critical because…the draft permit does not require any periodic stack testing and extremely limited continuous monitoring.

By definition, an emission unit's Potential to Emit is equal to 100% of the emission limit included in the draft permit. Actual emissions were included in the application by cross-referencing the annual emissions update.

From Section II.B, Paragraph 2 of *SELC et al:*

Potential-emissions calculations are also vital to assessing whether key requirements apply to given units. Title V's Compliance Assurance Monitoring ("CAM") is just one example. And although AdvanSix does identify some units as subject to CAM requirements based on their potential

uncontrolled emissions, the public is not able to assess whether any other units should also be subject to CAM requirements.

CAM is the only potentially applicable requirement that is mentioned in this comment. The May 2023 Title V application update includes a CAM applicability analysis table (Table 14-2) for every emissions unit at the facility that is subject to a permit limit and/or uses a control device (i.e., potentially subject to CAM). Where control efficiencies are listed, they can be cross-checked with the control efficiencies on Page 10 of the Form 805. These CAM applicability analysis tables will be attached to the SLFB.

From Section II.B, Paragraphs 3 & 4 of *SELC et al:*

We also note that AdvanSix has recently undertaken substantial modifications at the facility that did not undergo public notice and comment. After a complex netting exercise spanning several years, AdvanSix determined that these modifications would not trigger major New Source Review. Even under EPA's recently proposed rule concerning the scope of EPA's review of NSR requirements in its oversight of Title V permits, EPA would still consider whether AdvanSix's modifications should have been classified as major modifications, due to the lack of public notice and opportunity for comment. Inclusion of up-to-date emissions calculations in the Title V permit would at least enable the public to assess whether these modifications, along with the accompanying emission reductions AdvanSix claimed in the netting exercise, were legitimately minor modifications or whether they should have been subject to major New Source Review. This is especially important because AdvanSix claimed credit for emissions reductions that occurred in 2017, which is now outside of the relevant five-year "contemporaneous" period for purposes of NSR netting. Therefore, an accounting of the facility's potential emissions as part of the facility's 2023 Title V application is highly relevant; for instance, if AdvanSix projects that process units that previously reduced emissions now have higher potential emissions, that could mean the past "minor" modifications (which used emission reduction credits in the netting process) were in fact major modifications subject to major New Source Review.

In sum, the lack of potential emissions calculations in the Title V permit has made it impossible for the public to adequately review the draft Title V permit's applicable requirements, its monitoring, recordkeeping, and reporting provisions, or the legitimacy of AdvanSix's recent minor New Source Review modifications.

The 2022 NSR applicability determination and the 2022 minor NSR permit that resulted from it was and is a completely separate permit process from the Title V renewal process. Whether or not the facility's Title V application includes potential emission calculations has no bearing or impact on the validity of the 2022 NSR applicability determination, and the comment provides no rational basis explaining otherwise. The 2022 minor NSR permit includes all of the emission limits necessary to ensure that the Step 2 net emissions increases from the 2022 project remain below the Prevention of Significant Deterioration significance levels. The draft Title V permit (not the SFLB) properly incorporates all such emission limits as applicable requirements. Further, it is the draft Title V permit that was open for public comment, not the 2022 minor NSR permit. Finally, the comment does not allege any specific deficiency with the 2022 NSR applicability determination.

C. AdvanSix has also improperly withheld other emissions data that must be held public.

From Section III.C, Paragraph 1 of *SELC et al:*

AdvanSix cannot withhold "process design capacity" or "hourly maximum design rate[s] for its operations. This information is also emission data in that it is "information necessary to determine the identity, amount, frequency, concentration, or other characteristics" of the facility's emissions. Along with emission factors, which AdvanSix has also improperly omitted from the public version of its application, process throughput capacities are vital to allowing the public to verify that the facility is accurately calculating potential emissions, so that the public can assess applicable requirements and the adequacy of the draft permit's monitoring, recordkeeping, and reporting requirements.

AdvanSix submitted a confidential showing with the Title V application, and both DEQ and EPA have accepted that confidential showing in determining that such information meets the definition of Confidential Business Information (CBI). This includes process area and equipment production capacities, process area and equipment material and throughput (input) rates, process area and equipment heat input capacities and fuel use rates, equipment design/operating parameters, storage/process vessel design/operating parameters, and product annual loading rates for off-site delivery. By law, CBI may not be released to the public.

Likewise, process narratives and process flow diagrams are also information that is needed to determine the facility's emissions and applicable requirements. While we understand that highly detailed process flow diagrams may potentially be considered CBI, a high-level overview of the processes would not injure AdvanSix and would do a great deal to aid public understanding of the facility's operations, emissions, and applicable requirements and the draft permit's monitoring provisions.

Process diagrams and descriptions are included as CBI in the Confidential Showing for the Title V permit application. There is no legal obligation for the facility to submit a "high-level overview of the processes" for the public record, which would also be available to competitors and customers.

III. The draft permit's monitoring, recordkeeping, and reporting conditions are insufficient to assure compliance with emission limits

A. The draft permit requires no periodic testing and fails to assure compliance with emission limits

From Section III.A, Paragraph 6

In order to achieve adequate periodic monitoring for units and emission points that do not utilize CEMS, DEQ must require periodic stack testing in at least three instances. First DEQ must implement periodic compliance testing for any units that have previously been subject to initial testing requirements, unless repeated tests have demonstrated a substantial margin of compliance. In other words, if DEQ previously determined that initial stack tests were warranted, it stands to reason that adequate periodic monitoring under Title V would include periodic stack tests for the same units.

As stated in the SLFB, the draft permit contains sufficient monitoring, recordkeeping, and reporting provisions to provide a reasonable assurance of compliance with each applicable requirement/permit limitation. This comment does not specifically identify any permit limitation with allegedly deficient periodic monitoring. The comment also does not address the periodic monitoring included in the Title V

permit for these unidentified permit limitations or demonstrate why the existing monitoring requirements (including any periodic monitoring) for such limitations are specifically deficient. Instead, the comment asserts in a blanket fashion that adequate periodic monitoring for any "unit" where a stack test was included as part of an initial compliance demonstration can only be achieved by continuous emissions monitoring or by periodic stack testing. As noted, the Title V regulations require the inclusion of sufficient monitoring to demonstrate compliance with each applicable requirement, not for "units". As such, and given the comment's failure to identify specific applicable requirements or to challenge any of the existing monitoring requirements, this comment is not reasonably specific such that DEQ can effectively further respond. Even if the comment's assertion was somehow intended to apply on an (specific) applicable requirement basis, there is no support for such a position in the Clean Air Act or the Title V permit regulations, and there is significant contradictory support. For example, according to 40 CFR 64.2(b)(1)(i), NSPS and MACT standards promulgated after November 15, 1990, by default can be considered to include monitoring, recordkeeping, and reporting provisions sufficient to qualify as periodic monitoring without additional requirements. Many of these federal rules require an initial compliance demonstration that includes a stack test followed by continuing compliance requirements that include parametric monitoring, reporting, etc., but not additional stack tests. The draft permit includes a variety of compliance (monitoring) requirements of the same design. Accordingly, DEQ is not proposing any revisions to the draft permit in response to this comment.

Section III.A, Paragraph 7 of *SELC et al:*

Second and relatedly, DEQ must institute periodic stack testing for any unit that has previously failed a stack test, such as the Area 11 Centrifuges and hydroxylamine diammonium sulfate tower TW-18. These units need additional periodic stack testing to assure compliance given that they were previously exceeding emission limits.

As written, the only specific applicable requirements that the comment alleges have insufficient monitoring is the PM limit for the Area 11 centrifuges and the SO_2 limit for TW-18. Even for these two applicable requirements, the comment does not address the monitoring requirements already included in the draft permit, nor why the existing monitoring requirements are insufficient to provide a reasonable assurance of compliance. Instead, the comment asserts in a blanket fashion that adequate periodic monitoring for any "unit" that has previously failed a stack test can only (must) be achieved by periodic stack testing. There is no support for such a position in the Clean Air Act or the Title V permit regulations.

The Area 11 centrifuges (controlled by scrubber DC-25) included in this comment were re-tested on September 19, 2017, and demonstrated compliance with the permitted PM/PM_{10} limit of 0.35 lb/hr (the highest emissions rate of three test runs was 0.08 lb/hr). Since $PM_{2.5}$ is a subset of PM_{10}, the test also demonstrated compliance with the $PM_{2.5}$ limit of 0.10 lb/hr. AdvanSix is required by the draft permit to monitor the scrubber (DC-25) liquid flow rate and differential pressure, and to keep records of these parameters (as well as records of all scheduled and unscheduled maintenance for process equipment and air pollution control equipment, an inventory of spare parts to minimize air pollution control equipment breakdowns, written operating procedures for all process equipment and air pollution control equipment, and operator training records). Given the compliance margins and low levels of emissions, this periodic monitoring is considered sufficient with an adequate margin of safety.

A repeat stack test of TW-18 SO_2 emissions was conducted on October 8, 2015, and demonstrated compliance with the permit limit of 2.2 lb/hr (the highest emission rate of three test runs was 0.32 lb/hr). SO_2 emissions from TW-18 (Area 9 C-train disulfonate tower) are controlled by a packed bed scrubber (SE-19). Condition 162.c.ii of the draft permit requires the facility to establish and maintain the total pressure drop across and the scrubber liquid flow rate for the TW-18 packed bed scrubber (SE-19) necessary to demonstrate compliance with the sulfur dioxide emission limit for TW-18. AdvanSix is also required by the draft permit to monitor the scrubber (SE-19) liquid flow rate and differential pressure, and to keep records of these control device operating parameters (as well as maintain written operating procedures for all process equipment and air pollution control equipment, an inventory of spare parts to minimize duration of air pollution control equipment breakdowns, records of scheduled and unscheduled maintenance, and operator training records). Additionally, the facility instituted enhanced monitoring of the mist eliminators for all five of the Area 9 disulfonate towers as a result of the failed SO_2 stack test for TW-18, which included installing visual flow indicators to ensure flow to the spray nozzles of the mist eliminator in each tower, and a sight glass for the observation of the demister packing (candles) to ensure that the flow through each mist eliminator is uniform. The flow indicators and sight glasses are observed daily. This monitoring will be added to the permit, along with associated recordkeeping requirements.

As described above, the draft permit does include substantial monitoring requirements for each applicable requirement (PM limit for the Area 11 Centrifuges; SO_2 limit for TW-18) as described. Because compliance was demonstrated with a substantial margin for each applicable requirement upon re-test, and because the magnitude of each applicable requirement/emission limit is relatively small (<10% of major source levels in each case; <17% of major source levels in each case even using the emission rates from the failed stack tests), DEQ has determined that the monitoring included in the draft permit, and further supplemented by the additional monitoring for TW-18 (and the other disulfonate towers), is sufficient to provide a reasonable assurance of compliance without any periodic stack test requirements. As the comment does not demonstrate otherwise or address, at all, the monitoring included in the draft permit, DEQ is not proposing any revisions to the draft permit other than addition of the enhanced monitoring for the mist eliminators as supplemental periodic monitoring requirements.

*Although not necessary to respond to this comment, it should be noted that for each of the failed stack tests referenced by the comment, as in all cases of a stack test that indicates an exceedance of emission limits, a Notice of Violation was issued to AdvanSix. A repeat stack test is always required when an initial test fails to demonstrate compliance with the permit. DEQ follows EPA's High Priority Violation (HPV) policy and ACG-005 (**Guidance for the Interpretation of the Duration of Violations when Applying Criteria 2, 3, and 4 of EPA's 2014 Policy for High Priority Violations**). This is handled by compliance and enforcement staff rather than by permitting, though compliance/enforcement has the option to require some permit action as a remedy for a violation. At the present time, there are no outstanding instances of stack tests which failed to demonstrate compliance for any emission unit at AdvanSix.*

Section III.A, Paragraph 8 of *SELC et al:*

Third, DEQ must require periodic stack testing for any process units that have the potential to emit pollutants at a rate that is close to the relevant emission limits. We note that the public cannot accurately identify these units because, as discussed above, AdvanSix's application was incomplete and did not include potential emissions estimates at all.

By definition, the permitted emission limit defines the potential to emit for a particular emissions unit. These are listed in the draft permit.

B. The initial stack testing requirements do not demonstrate compliance with emission limits.

While the draft permit does require "initial compliance testing for several units, these initial testing provisions are also inadequate to assure compliance. Specifically, Condition 113, which requires VOC testing of VT-N2 through N5 (volatile organic liquid storage tanks), states that testing shall occur when the units are at a "minimum of 80% of their maximum capacity." Likewise, Conditions 204 and 205 require VOC testing for CL-15, CL-81, and CL-62 (Toluene/Sulfate Stripping Columns) to demonstrate that the controlling flares achieve 98% VOC destruction. But again, these conditions only require operations at a "minimum of 80% of their maximum capacity."

It is unclear why DEQ selected a floor of 80% of maximum operating capacity for these units during the stack tests, but unless DEQ has determined the worst-case emissions from these units occur at 80% capacity (or can be reasonably scaled from testing at 80% capacity) rather than at higher capacities, these tests will not demonstrate compliance with the underlying VOC emission limits. Alternatively, if DEQ has in fact determined that worst-case emissions occur at 80% capacity, then the requirement to only test at a *minimum* of 80% operating capacity also fails to assure that the measured emissions represent worst-case emissions, since the provision would allow testing at rates other than the worst-case operating scenarios. In either instance, the testing condition fails to demonstrate compliance with the underlying VOC limits.

In any event, the draft statement of basis fails to explain the rationale behind the minimum 80% operating-capacity requirements in these testing provisions. As explained above, this is itself a defect that DEQ must address.

EPA's National Stack Testing Guidance (April 27, 2009) recommends that performance tests be conducted under "Representative Operating Conditions." For the two examples cited, DEQ has determined that testing at a minimum of 80% of maximum rated capacity (where the operating rate cannot fall below 80% of maximum rated capacity at any time during testing) constitutes representative operating conditions. It is possible that maximum rated capacity will be reached during the test, and the minimum requirement does not preclude that. However, because in practice it will not always be possible to achieve the maximum rated capacity on the day of a scheduled compliance test, let alone maintain 100% of maximum rated capacity for the entire duration of the testing (particularly for the columns in Conditions 204 and 205 where all process equipment exhausted to the thermal oxidation unit has a minimum operating requirement), DEQ has historically relied on an 80% capacity minimum as representative performance for this facility and the referenced language is taken directly from the underlying permit conditions (i.e., the applicable requirements). For the conditions cited, this information will be added to the SLFB.

C. The permit's opacity monitoring requirements are vague, are unenforceable, and fail to assure compliance with opacity limits.

Throughout the draft permit, DEQ requires opacity monitoring as such:

> **[emission points] shall be observed visually at least once each operating month for at least a brief time period to determine which emissions units have normal visible emissions (does not include condensed water/vapor steam), unless a 40 CFR 60 Appendix A Method 9 visible emissions evaluation is performed on the emissions unit.**

These conditions are unacceptably vague and fail to assure compliance with the underlying opacity limits. For instance, the duration of the observations, described as a "brief period of time" is entirely subjective, as is any determination of "normal visible emissions." Utilizing "normal" visible emissions is not compatible with assuring compliance with an objective opacity limit. If a unit frequently exceeds the opacity limit, then observations of "normal visible emissions" will do nothing to discover opacity violation, as by definition the excess opacity will be "normal" opacity. Additionally, the permit's opacity monitoring provisions do not require any sort of rigor or consistency in making opacity observations. For example, the company could make opacity "observations" on gray, overcast days or even at night, while ostensibly meeting the specified monitoring requirements.

In order to assure compliance with the underlying opacity limits, DEQ should either require full Method 9 monitoring or at least require Method 22 observations in the first instance to determine whether visible emissions are present. If visible emissions are detected with Method 22, then the permit should require Method 9 observations to quantify the opacity and determine whether violations of the opacity limits are occurring.

Finally, given the history of noncompliance at the facility, including violations of opacity limits, the requirement to conduct visible emissions monitoring only once per month is wholly inadequate. The underlying opacity limits apply on a short-term basis (six-minute intervals) and the draft permit conditions on this point allow the facility to choose any time during a given month to conduct the requisite opacity monitoring. This runs afoul of Title V requirements, which provide that permits must contain "periodic monitoring sufficient to yield reliable data from the *relevant time period* that are representative of the source's compliance with the permit. Accordingly, DEQ should instead implement daily opacity monitoring requirements. DEQ should also consider using digital opacity monitoring to provide continuous opacity monitoring data, especially for units or locations that have previously violated opacity requirements.

The opacity monitoring conditions will be revised to address these concerns, including the Conditions cited in the comment (Conditions 352, 411, 439, 560, and 593), as well as for Conditions 196, 261, 351, 390, and 489 of the draft permit.

DEQ considers daily visible emissions observations to be excessive, given the large number of emission points at the plant, many of which are VOC or natural gas combustion sources, which would not be expected to have visible emissions. Additionally, AdvanSix has not been cited for an opacity violation since 2013, for exceeding the ten percent opacity limit on a molten sulfur storage tank (VT-441).

The revised condition will require weekly visible emissions observations for a fixed period of time while the equipment is operating during daylight hours. Note that the opacity standard (9VAC5-50-80) does not

specify the use of reference Method 22. A monthly schedule can be instituted after six months if no visible emissions have been observed during the weekly visible emissions observations over that time period, but the facility will be required to revert back to weekly visible emission observations if any visible emissions are noted during any monthly visible emissions observations.

D. Many of the draft permit's averaging times for compliance monitoring are far too long.

Section III.D, Paragraph 3 of *SELC et al*

Here, to cite one example, the Powerhouse boilers (FU-17, FU-18, and FU-19) are subject to NOx limits, but the monitoring and compliance average periods for these limits are on a 30-day rolling basis. This is improper considering that the relevant NAAQS are much shorter: the ozone NAAQS applies on an 8-hour basis (with NOx as the primary precursor pollutant for ozone), the nitrogen dioxide NAAQS applies on a 1-hour basis, and there is a $PM_{2.5}$ NAAQS with 24-hour averaging. The draft permit's averaging periods therefore fail to assure compliance with the NAAQS.

The comment cites the example of a 30-day rolling average used to demonstrate compliance with the NOx emission standard of NSPS Subpart Db for the boilers. As this is an applicable requirement, it must be included in the Title V permit. The NSPS requirement is not related to NAAQS compliance.

Section III.D, Paragraph 4

Likewise, in many instances, the permit utilizes 12-month averaging periods, which are insufficient to assure compliance with short-term NAAQS. Although some of these limits may be synthetic minor limits (where a 12-month average is often used), at least some appear to have been implemented as BACT limits, which do require short-term averaging periods. For example, Condition 4 implements a temperature limit to reduce VOC emissions from tanks; this condition cites to the 2022 NSR permit, where the underlying permit condition (2022 NSR Permit Condition 28) cites to 9VAC5-50-260, which implements BACT requirements. To the extent these limits with 12 month rolling averages are BACT limits as opposed to synthetic minor limits, a 12-month averaging time completely fails to assure compliance with the 8-hour ozone NAAQS.

Tank emissions calculations are based on annual average temperature per AP-42 Section 7.1. BACT requirements and NAAQS are not directly related. Virginia DEQ maintains ambient air monitors downwind from the facility that demonstrate compliance with the NAAQS for ozone and nitrogen oxides. The NAAQS are not applicable requirements for the Title V permit program.

IV. The permit appears to omit key LDAR provisions under NSPS Subpart VV and VVa.

New Source Performance Standards ("NSPS") Subparts VV and VVa set leak detection and repair ("LDAR") standards for synthetic organic chemical manufacturing industrial units to detect and fix fugitive emissions from equipment leaks. Subpart VV applies to facilities constructed, reconstructed, or modified after 1981, while Subpart VVa applies to facilities constructed, reconstructed, or modified after 2006. The draft permit, however, includes only a single condition implementing Subpart VVa LDAR standards. Condition 22 [of the draft permit], requiring Subpart VVa LDAR control of emissions from the KA Oil in Area 6. Several other units are subject to Subpart VV "equivalent"

requirements (based on past agreements between DEQ and the facility related to Reasonably Available Control Technology conditions), and the statement of basis also explains that VVb (which applies to units constructed, reconstructed, or modified after 2023) will be an applicable requirement in the future. Despite these provisions, it is unclear why more units are not subject to full Subpart VV and VVa LDAR requirements, rather than either no such requirements or only "equivalent" requirements.

AdvanSix's application, meanwhile, states that the facility is not subject to NSPS Subpart VV and is completely silent on the related Subpart VVa. Yet as DEQ's draft statement of basis makes clear, at least one unit, the KA Oil equipment in Area 6, is indeed subject to Subpart VVa. AdvanSix does not explain why Subpart VV or Subpart VVa is not applicable. For example, there is no discussion of changes after 2006 that may have triggered Subpart VVa in other process units besides KA Oil equipment in Area 6. Moreover, DEQ's statement of basis states that units in both Area 6 (the KA Oil equipment) and Area 7 when no Subpart VVa conditions exist in the draft permit. To the extent that units have been changed since 2006 but have not triggered Subpart VVa as a result of those changes, should be fully provided in the public record.

First, NSPS Subpart VVa applies only to process units in the synthetic organic chemicals manufacturing industry (SOCMI) that produce the chemicals listed in 40 CFR 60.489. This includes caprolactam, cyclohexanone and cyclohexanol, which are produced only in Areas 6 (cyclohexanone/cyclohexanol) and 8/16 (caprolactam) of the AdvanSix Hopewell facility. The reference to Subpart VVa in Area 7 was added in error and has been removed.

The Area 6 process unit that produces cyclohexanol is subject to 40 CFR 63 (MACT) Subpart H, the LDAR component of the Hazardous Organics NESHAPS (HON) Rule. The LDAR provisions of Subpart H apply to SOCMI process units with components in organic hazardous air pollutant service and are more stringent than those of the NSPS because the rule applies to VOC HAP. Because of the regulatory provisions of 40 CFR 63.160(b)(1), a process unit that is subject to MACT Subpart H that is also subject to the provisions of 40 CFR Part 60 will be required to comply only with the provisions of Subpart H.

The KA Oil Process in Area 6 is not subject to MACT Subpart H, because it is a process unit which isolates cyclohexanone from a 50/50 wt.% mixture of cyclohexanone/cyclohexanol byproduct (KA Oil). Cyclohexanone and cyclohexanol are not hazardous air pollutants, and therefore the KA Oil Process is not subject to MACT Subpart H LDAR requirements. This process unit, which has not yet been constructed, is currently subject to NSPS Subpart VVa. Though AdvanSix may choose to comply with the LDAR provisions of MACT Subpart H in the future in accordance with 40 CFR 60.480a(e)(2), it has not yet indicated that this will be the case. Additionally, since it will be constructed after the applicability date of the proposed NSPS Subpart VVb, the KA Oil process is expected to be subject to the provisions of NSPS Subpart VVb when it is finalized. As this rule is not currently promulgated it cannot be included in the Title V permit; however, AdvanSix will comply with the rule regardless. This information will be added to the SLFB.

Process units in Area 8/16 are subject to the LDAR provisions of 40 CFR 63 (MACT) Subpart FFFF, the Miscellaneous Organic NESHAPS (MON) Rule.

Regardless, all equipment in these areas have been subject to LDAR requirements substantively equivalent to NSPS Subpart VV in accordance with the VOC RACT Consent Agreement which became effective in 1997. DEQ cannot designate Subpart VV to be applicable if it is not, in fact, applicable. Substantively equivalent requirement standards are identical to the federal standards, with the exception that they are made enforceable by the RACT Consent Agreement or under NSR as BACT requirements instead of by incorporating federal New Source Performance Standards.

V. DEQ must require AdvanSix to provide emergency notifications to the surrounding community and comply with Clean Air Act section 112(r)(7).

Virginia Title V permits contain a General Condition for Accidental Release Prevention (Condition 652 of the proposed) permit, which generally states that "if the permittee has more or will have more than a threshold quantity of a regulated substance in a process, as determined by 40 CFR 68.115, the permittee shall comply with the requirements of 40 CFR Part 68." 40 CFR Part 68 is the regulation implementing CAA Section 112(r).

The AdvanSix Hopewell plant is subject to the Risk Management Plan provisions of 40 CFR Part 68, which were recently updated on March 11, 2024. The Title V permit requires AdvanSix to meet the requirements of 40 CFR 68, which includes the emergency notification provisions therein.

Public Hearing Criteria and Analysis of Public Notice Response:

A. According to the Virginia Regulations for the Control and Abatement of Air Pollution found at 9VAC5-80-35 B, a public hearing may be requested by interested persons if those requests contain the following:

1. The name, mailing address, and telephone number of the requester;
2. The names and addresses of all persons for whom the requester is acting as a representative (for purposes of this requirement, an unincorporated association is a person);
3. The reason why a public hearing is being requested:
4. A brief, informal statement setting forth the factual nature and extent of interest of the requester or of the persons for whom the requester is acting as a representative in the application or tentative determination, including an explanation of how and to what extent such interest would be directly and adversely affected by the issuance, denial, modification, or revocation of the permit in question; and
5. Where possible, specific reference to the terms and conditions of the permit in question, together with suggested revisions and alterations of those terms and conditions that the requester considers are needed to conform the permit to the intent and provisions of the State Air Pollution Control Law (§ 10.1-1300 et seq.)

B. According to the Virginia Regulations for the Control and Abatement of Air Pollution found at 9VAC5-80-35 C, the director shall review all timely requests for a public hearing following the end of the public comment period and shall grant a public hearing if the director finds the following:

1. That there is significant public interest in the issuance of the permit as evidenced by receipt of at a minimum of 25 individual public requests for a hearing.

2. That the requests raise substantial disputed issues relevant to the issuance of the permit in question.
3. That the action requested by the interested party is not inconsistent with, or in violation of, the Virginia Air Pollution Control Law, federal law, or any regulation promulgated thereunder,

Recommendation:
The requests for a public hearing have been reviewed in light of the criteria set forth in the Virginia Regulations for the Control and Abatement of Air Pollution at 9VAC5-80-35 C.

The criteria for granting a public hearing have not been met. DEQ has received less than 25 individual requests for a public hearing. Staff recommends, therefore, that commenters' request for a hearing be denied.

Approved: Golden James bia20947

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James J. Golden
Director of Central Operations