west virginia department of environmental protection

Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
(304) 926-0475

Harold D. Ward, Cabinet Secretary
dep.wv.gov

October 2, 2025

VIA EMAIL

Adam Kron, Esq.
Senior Attorney
Earthjustice
akron@earthjustice.org

James Yskamp, Esq.
Senior Attorney
Earthjustice
jyskamp@earthjustice.org

Maya Nye, Ph.D.
People Concerned About Chemical Safety
mayanye@gmail.com

Pam Nixon
People Concerned About Chemical Safety
pamnixon@aol.com

Kathy Ferguson
People Concerned About Chemical Safety
kferdata@yahoo.com

Charlise Robinson
Ohio River Coordinator
West Virginia Rivers Coalition
crobinson@wvrivers.org

RE: Response to Public Comments
Covestro LLC
South Charleston Plant
R30-03900102-2025

Dear Commenters:

The West Virginia Division of Air Quality (WV DAQ or DAQ) received your comments regarding the Title V permit renewal, R30-03900102-2025, for Covestro LLC's South Charleston Plant on Thursday, February 27, 2025. DAQ has reviewed your comments and provides the following responses.

Comment I:

I. DAQ MUST PROVIDE A SUFFICIENT PUBLIC COMMENT PERIOD ON THE DRAFT PERMIT

Commenters stated that although DAQ denied their request submitted on February 18, 2025 for a 45-day extension of the Draft Permit's comment period on the basis that U.S. EPA had extended the comment period on the proposed revisions to the National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production (NESHAP Subpart PPP or PEPO MACT), they had raised a second issue as basis for extending the Draft Permit's comment period which was the extensive amount of materials associated with this permitting action (well over 1,200 pages, including an 836-page application, a 79-page draft permit, and a combined 383 pages of IPR files). Commenters again requested extension of the comment period on the basis of the application's size, but if DAQ did not grant the extension for this comment period, they requested that the agency consider providing longer comment periods in future permitting actions where the record exceeds a certain page count.

DAQ Response to Comment I

On February 18, 2025, Commenters requested that DAQ extend the Draft comment period by 45 days in order to account for the concurrent comment periods on EPA's proposed revisions to the National Emission Standards for Hazardous Air Pollutants for Polyether Polyols Production which would end on February 25, 2025 and the comment period for the Draft Title V permit ending two days later on February 27, 2025. Commenters also mentioned that extension of the comment period on the Draft Title V permit was necessary because of the amount of materials associated with the Title V permitting action, but this seemed to be a secondary concern to support their primary concern of the concurrent comment periods since it was not mentioned in the accompanying email. On February 19, 2025, DAQ denied the request for extension of the Draft comment period because EPA had just extended the comment period for NESHAP Subpart PPP until March 18, 2025 which gave commenters a total of 81 days to review the revisions to NESHAP Subpart PPP and the two comment periods would no longer end within two days of each other. While not mentioned in the email from DAQ denying the request, DAQ did take into account both the application size and the concurrent comment periods when considering Commenter's justification for extension of the Draft Title V comment period. However, since the revisions to NESHAP Subpart PPP were published in the Federal Register on December 27, 2024, Commenters already had a month to review the revisions before the Draft Title V permit went out for public comment. Then, with the extension of the comment period for NESHAP Subpart PPP to March 18, 2025, Commenters had an additional 19 days to continue reviewing the NESHAP Subpart PPP revisions. DAQ believed Commenters had ample time to review both the NESHAP Subpart PPP revisions and the Draft Title V permit.

Since Commenters again mentioned the amount of materials associated with this permitting action, DAQ will address the request for extension of the Draft comment period based only on the amount of materials. Commenters stated that there is an 836-page application. This is true and that application was included on DAQ's website along with a 79-page draft permit, and 383 pages of IPR files. However, this 836-page application was also included online in Application Xtender (AX) and has been available since the application was originally submitted in April 2022. Also, DAQ provides a fact sheet which lists all the applicable requirements (new source review permits, state rules, and federal regulations) and for renewals, it specifies all the changes which have been made as part of the Title V permit renewal. For Covestro LLC's South Charleston Plant, the "Determinations and Justifications" section of the fact sheet describes the changes which have been made and lists every condition number which has been revised in the Title V renewal permit with an explanation of why it was changed. This fact sheet can be used to assist review of the 79-page draft permit. Another thing to mention is that this facility was issued an initial Title V permit in 2006 and the permit has been renewed twice, in 2012 and in 2017. This Draft Title V permit is the 3rd renewal for this facility. In addition to the 836-page application being on AX since April 2022, the 2017 renewal and its revisions have been available on DAQ's website since issuance, so a lot of permitting material was available prior to January 28, 2025. Therefore, DAQ does not see the need to extend the comment period on the Draft Title V permit based on the amount of materials associated with this permitting action.

Commenters also requested that if we did not extend the comment period for this Draft permit to consider longer comment periods in future permitting actions where the record exceeds a certain page count. DAQ's rule 45CSR30, requires thirty (30) days for public comment. The Secretary may grant further extension of the comment period by an additional thirty (30) days if good cause is shown. The Secretary does not agree that the length of a permit application and associated permit, fact sheet, and IPR file alone is good cause that a public comment period should be extended an additional thirty (30) days. This should remain on a case-by-case basis with potential commenters requesting an extension and providing a reason for such extension.

Comment II

II. DAQ MUST REVISE THE DRAFT PERMIT TO ADDRESS THE SOUTH CHARLESTON PLANT'S SIGNIFICANT ETHYLENE OXIDE EMISSIONS

A. DAQ should revise the Draft Permit's facility-wide limit for ethylene oxide to lower than the current 0.25 tons per year under section 11.1.1. To the extent that DAQ asserts this comment is outside the scope of the Title V permit renewal, Commenters assert that this is the first time these limits have been available for public notice and comment and Commenters claim that DAQ failed to provide public notice and comment on the revised ethylene oxide emission limits because

the basis for lowering the limits were part of the collaborative agreement which was a private agreement and incorporated under a minor new source review (NSR) Class I administrative update which did not have a public comment period.

DAQ Response to Comment II.A

The Title V permit includes all applicable requirements that apply to the source at the time of permit issuance. The Title V operating permit does not establish new emission or operating limitations. These are established through new source review permits, state rules, and federal regulations. The Title V permit does not have the authority to further lower the facility-wide ethylene oxide (EtO or EO) emission limits in condition 11.1.1 below 0.25 tpy as these were established in a minor NSR Class I administrative update which lowered ethylene oxide emissions and removed the ethylene oxide distribution system.

Commenters should understand that the terms of the collaborative agreement and subsequent ethylene oxide emission limitation reductions were voluntary. There was no state rule or federal regulation which required the reductions. The DAQ worked with Covestro LLC to reduce emissions of ethylene oxide through unique, site-specific, state-only enforceable commitments, not otherwise addressed by current law or regulation, designed by the parties to specifically respond to local community comments. The collaborative agreement set forth additional requirements that Covestro LLC voluntarily agreed to implement. The collaborative agreement was signed on May 16, 2023 and required the following actions for Covestro LLC:

- Within four (4) weeks of the effective date of the collaborative agreement, Covestro had to prepare and submit an Administrative Update (Class I) to its West Virginia Department of Environmental Protection Regulation 13 Permit to reduce the permitted EtO emissions limitations to be reflective of Covestro's current business plan. The Class I Administrative update, R13-2561O, was issued on June 14, 2023.

- In addition to its obligations to comply with the federal LDAR program as set forth in 40 C.F.R. §63.1434(a), within four (4) weeks of the effective date of the collaborative agreement, Covestro South Charleston Plant, became subject to the following additional state-only requirements:

    - Skip periods that are authorized under the federal LDAR program shall not be utilized by the South Charleston Plant.

    - Compliance monitoring shall be conducted at the frequencies indicated below. For readings taken during compliance monitoring that are at or above the action threshold of 10 ppm, Covestro will

attempt to repair consistent with 40 C.F.R. §63.1434(a) as it was promulgated on June 1, 1999, after which re-monitoring will occur.

Component Type	Frequency	Action Threshold
Connector	Quarterly	10 ppm
Valve	Quarterly	10 ppm

- The Covestro South Charleston plant shall keep records of any measurements at or above the action threshold, including concentrations and repairs and/or repair attempts. The requirements of this paragraph are not required by federal or state law and were entered into voluntarily, consistent with discretionary authorities under state law, and are not intended nor designed for incorporation into the Covestro South Charleston Plant's Clean Air Act Title V permit.

R13-2561O resulted in the following changes incorporated in the Draft Title V permit:

- The Ethylene Oxide (EO) Distribution equipment was removed from the Emission Units Table in Section 1.1.
- In condition 8.1.2, the ethylene oxide emission limits were decreased from 11 lb/hr and 0.25 tpy to 4.0 lb/hr and 0.065 tpy.
- In condition 8.1.6, the ethylene oxide emission limits were decreased from 24.0 lb/hr and 0.25 tpy to 8.6 lb/hr and 0.065 tpy.
- In condition 11.1.1, the annual facility-wide emission limit for ethylene oxide was decreased from 0.71 tpy to 0.25 tpy.
- Section 12.0 for the EO Distribution System was removed.

45CSR§13-4.1.d states that the Secretary may incorporate changes to a permit as an administrative update without providing notice to the public, provided that such permit revisions are designated as a Class I administrative update as defined in subdivision 4.2.a. Under 45CSR§13-4.2.a.8, a Class I administrative update may consist of a "change in a permit condition as necessary to allow changes in the operating parameters, emission points, control equipment or any other aspect of a source which results in no increase in the emission of any existing regulated air pollutant or any new regulated air pollutant." Under 45CSR§13-4.2.a.6, a Class I administrative update may also include the permanent removal of

equipment. The DAQ did not improperly fail to provide public notice and comment because the removal of the EO Distribution System equipment from the permit and the decreased ethylene oxide emission limits fall under the definition of a Class I administrative update in 45CSR13 which does not require public notice. Since inclusion of these ethylene oxide reductions meet the definition of an NSR Class I administrative update, DAQ has followed all permitting requirements under 45CSR13 and no additional action will be taken regarding this comment.

B. DAQ should revise the Draft Permit to include monitoring requirements and other conditions sufficient to ensure that the South Charleston Plant actually complies with the Draft Permit's limits for ethylene oxide, as well as propylene oxide, other HAPs, and VOCs. Specifically mentioned were the hourly and annual emission limits in conditions 8.1.2 and 8.1.6 with monitoring requirements under Section 8.2.1. Commenters stated that monitoring production rates of B103 and B196 reactor systems and "process specifications and activities" (including the time from the end of the epoxide feed, minimum reactor temperature, minimum catalyst concentration, and nominal batch size) were not adequate to ensure compliance with the hourly limits, including in particular that the monitoring requirements do not include any sort of specified time interval which should bear a proper relationship to ensure compliance with hourly emission limits. They also mentioned that it is not clear from condition 8.2.1 what the permittee is monitoring in regard to time from the end of the epoxide feed or what minimum reactor temperature the permittee is monitoring to ensure compliance with the limits; and any such monitoring methods, calculations, or other necessary information must be clear on the face of the permit.

DAQ Response to Comment II.B

In EPA's order on Petition No. III-2023-16 for the Union Carbide Corporation Institute Facility's Title V permit, EPA described five factors permitting authorities may consider as a starting point in determining appropriate monitoring for a particular facility. These are: (1) variability of emissions from the unit in question; (2) likelihood of a violation of the requirements; (3) whether add-on controls are being used for the unit to meet the emission limit; (4) the type of monitoring, process, maintenance, or control equipment data already available for the emission limit; and (5) the type and frequency of the monitoring requirements for similar units at other facilities.

1) The variability of emissions from the unit in question.

Emissions can vary based on the type of batch being produced and the production rate. Annual emission limits established in conditions 8.1.2 and 8.1.6 for ethylene oxide, propylene oxide, other HAPs, and VOCs from

the B103 and B196 reactor systems were established based on maximum production rates and emission factors developed from sampling and testing the highest emitting batch. Hourly emission limits were based on emissions from the highest emitting batch.

2) Likelihood of a violation of the requirements

Since annual emission limits in conditions 8.1.2 and 8.1.6 represent the emissions when operating at the maximum production limits established in conditions 8.1.1 and 8.1.5 and hourly limits are based on hourly emissions from the highest emitting batch recipe, the likelihood of violating these emission limits is low.

3) Whether add-on controls are being used for the unit to meet the emission limit

Add-on control devices are not being used for the reactors to meet the emission limits established in conditions 8.1.2 and 8.1.6. The reactor systems are controlled with Extended Cookout (ECO) as defined in 40 C.F.R. §63.1423. Extended Cookout (ECO) means a control technique that reduces the amount of unreacted ethylene oxide (EO) and/or propylene oxide (PO) (epoxides) in the reactor. This is accomplished by allowing the product to react for a longer time period, thereby having less unreacted epoxides and reducing epoxides emissions that may have otherwise occurred.

4) The type of monitoring, process, maintenance, or control equipment data already available for the emission limit.

For the emission limits in conditions 8.1.2 and 8.1.6, the permittee is required to demonstrate compliance by monitoring the production rates of the B103 and B196 reactor systems (condition 8.2.1) and to maintain records of the production rates along with the hours of operation (condition 8.4.3). Conditions 8.2.1 and 8.4.3 also require monitoring and recordkeeping of the following parameters: nominal batch size, minimum reactor temperature, minimum catalyst concentration, and time from the end of the epoxide feed (end of the epoxide feed is considered batch completion). These parameters, along with others, are required to be monitored under 40 C.F.R. 63 Subpart PPP (PEPO MACT) to demonstrate compliance with the required total epoxide emissions (i.e., ethylene oxide, propylene oxide, and other VOC HAPs) reduction of 98%. The PEPO MACT requirements are as follows:

- 98% reduction requirement for existing affected sources (condition 8.1.14)

- Design evaluation which establishes the minimum duration (time) of the ECO, the maximum pressure at the end of the ECO, or the maximum epoxide concentration in the reactor liquid at the end of the ECO for each product class (condition 8.1.17)
- For each product class, determination of the batch cycle percent epoxide emission reduction for the most difficult to control product in the product class (condition 8.1.18)
- Define the end of epoxide feed (condition 8.1.19)
- Define the onset of the ECO (condition 8.1.20)
- Determine emissions at the end of the ECO (condition 8.1.21)
- Determine percent epoxide emission reduction (condition 8.1.22)
- Determination of epoxide concentrations for the liquid phase (condition 8.1.23)
- Determination of epoxide concentrations for the vapor phase (condition 8.1.24)
- Determination of the total pressure of the system (condition 8.1.25)
- Determination if pressure decay curves are similar in order to constitute a product class (condition 8.1.26)
- Monitoring of the time from the end of the epoxide feed (condition 8.2.3.i.1.i and also condition 8.2.1.a)
- Establishment of the time from the end of the epoxide feed to the end of the ECO that shall be monitored during periods of operation to demonstrate compliance with the 98% total epoxide reduction (condition 8.2.3.i.2.i)
- For each batch cycle where ECO is used to reduce epoxide emissions, the permittee shall record the value of the time from the end of the epoxide feed to the end of the ECO and compare that value to the one established in 8.2.3.i.2.i. An ECO excursion is defined as when the time from the end of the epoxide feed to the end of the ECO is less than the time established in 8.2.3.i.2.i. (condition 8.2.3.i.3.i)
- ECO Recordkeeping Requirements (condition 8.4.5)
    - Operating conditions of the product class, including:
        - Pressure decay curve;
        - Minimum reaction temperature (also required under condition 8.2.1.b)
        - Number of reactive hydrogens in the raw material;
        - Minimum catalyst concentration (also required under condition 8.2.1.c)
        - Ratio of EO/PO at the end of the epoxide feed; and
        - Reaction conditions, including the size of the reactor or batch (also required under condition 8.2.1.d)
    - A listing of all products in the product class

- The concentration of epoxide at the end of the epoxide feed as determined by condition 8.1.19
- The concentration of epoxide at the onset of the ECO as determined by condition 8.1.20
- The uncontrolled epoxide emissions at the onset of the ECO as determined by condition 8.1.20
- The epoxide emissions at the end of the ECO as determined by condition 8.1.21
- The percent epoxide reduction for the batch cycle as determined by condition 8.1.22
- The time from the end of the epoxide feed to the end of the ECO and any excursions when this time is less than the time established (also required under condition 8.2.1.a)
- For each batch cycle, the product being produced and the product class to which it belongs
- For each batch cycle, the end of the epoxide feed to the end of the ECO (also required under condition 8.2.1.a)

- ECO Reporting Requirements (conditions 8.5.1 through 8.5.3)
  - Reports of each batch cycle for which an ECO excursion occurred
  - Notification of each batch cycle when the time and duration of epoxide emissions before the end of the ECO, exceed the time and duration of the emission episodes during the initial epoxide emission percentage reduction determination
  - Notification of any new polyether polyol products not previously assigned to a product class
  - Notification of any changes in operation for a polyether polyol already assigned to a product class

5) <u>The type and frequency of the monitoring requirements for similar units at other facilities.</u>

The type and frequency of monitoring used at this facility is similar to that used at other affected facilities subject to the PEPO MACT with a batch process using extended cookout as a control method. Facilities not subject to the PEPO MACT, would maintain monitoring and recordkeeping of production and hours of operation, and some operating parameters but not to the extent required under the PEPO MACT.

DAQ reviewed the monitoring specified in condition 8.2.1 using the five factors suggested by EPA and determined that the current monitoring used to demonstrate compliance with the hourly and annual emission limits in conditions 8.1.2 and 8.1.6 is adequate when used in conjunction with the recordkeeping requirements specified in condition 8.4.3 (production rates, hours of operation, and parametric

monitoring in condition 8.2.1), and the monitoring, recordkeeping and reporting required by the PEPO MACT.

C. DAQ should revise the Draft Permit to incorporate fenceline monitoring and corrective action requirements to better monitor fugitive ethylene oxide emissions (and other HAPs and VOCs) and ensure compliance with the permit's terms.

DAQ Response to Comment II.C

The Title V renewal is an operating permit that contains the facility's current applicable requirements. There are currently no applicable requirements for fenceline monitoring. On December 27, 2024 EPA proposed an update to 40 C.F.R. 63, Subpart PPP, National Emission Standards for Hazardous Air Pollutant Emissions for Polyether Polyols Production (PEPO MACT) that would require fenceline monitoring for ethylene oxide using recently approved Method 327, which would apply to this facility. If the PEPO MACT is issued with the Method 327 requirements, the facility will become subject to these requirements upon the effective date, and WV DAQ will modify the Title V permit to incorporate those requirements in accordance with 45CSR§§30-6.5 or 6.6.

Comment III

III. DAQ MUST REVISE THE DRAFT PERMIT'S MONITORING AND OTHER PROVISIONS TO ENSURE COMPLIANCE WITH THE OPACITY LIMITS

Commenters claim the Draft Permit does not include adequate monitoring, testing, reporting or recordkeeping requirements to ensure compliance with the continuous opacity limits for several emissions points at the South Charleston Plant, including emission point E-655 (the Y-2124 thermal oxidizer) and emission points E-3128, E-3228, E-3328, E-5228A, and E-310 within Flexible Polyols Production. Specifically for Y-2124, the limit under condition 4.1.8 is from 45CSR6 and states "No person shall cause, suffer, allow or permit emission of smoke into the atmosphere from any incinerator which is twenty (20%) percent opacity or greater. For emission points E-3128, E-3228, E-3328, E-5228A, and E-310, condition 8.1.27 states "No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any process source operation which is greater than twenty (20) percent opacity except as noted in subsections 45CSR§§7-3.2, 3.3, 3.4, 3.5, 3.6, and 3.7." Commenters claim that for each of these requirements, there is no required monitoring of any frequency and monitoring is only required upon the request of the Director which is not adequate to ensure compliance with the continuous opacity limits. Also, Commenters stated that visual observations and Method 9 evaluations cannot be conducted at night or under weather conditions that make it difficult to detect opacity through visible observation (e.g., dark clouds). Lastly, Commenters claim the Draft Permit and its record are deficient

because DAQ did not adequately explain how the monitoring provisions can ensure compliance with the opacity limits. To remedy the issue, Commenters requested that DAQ revise the Draft Permit to mandate the use of continuous opacity monitoring systems for the emissions points listed above.

DAQ Response to Comment III

In EPA's order on Petition No. III-2023-16 for the Union Carbide Corporation Institute Facility's Title V permit, EPA described five factors permitting authorities may consider as a starting point in determining appropriate monitoring for a particular facility. These are: (1) variability of emissions from the unit in question; (2) likelihood of a violation of the requirements; (3) whether add-on controls are being used for the unit to meet the emission limit; (4) the type of monitoring, process, maintenance, or control equipment data already available for the emission limit; and (5) the type and frequency of the monitoring requirements for similar units at other facilities.

20% Opacity Limit from 45CSR§6-4.3 for Emission Point E-655 (Y-2124)

Since 45CSR§6-4.3 provides for a 20% opacity limit with Method 9 opacity testing conducted upon the request of the Director as specified in Title V condition 4.3.1, a review of the adequacy of the monitoring was conducted using EPA's five factors.

1) The variability of emissions from the unit in question.

   Waste gas, consisting of volatile organic compounds (VOCs) from multiple emission units, is combusted in the thermal oxidizer Y-2124 (emission point E-655). The maximum hourly flow rate of the waste gas going to the thermal oxidizer is limited by Title V condition 4.1.5.c and the emissions sources routed to the thermal oxidizer are defined in the Section 1.1 Emission Units Table of the Title V permit. In addition to combusting waste gas, the thermal oxidizer uses pipeline quality natural gas as a supplemental fuel. There are no ash forming compounds in the waste gas or the pipeline quality natural gas. A small amount of soot could be produced as a by-product of combustion, but the maximum particulate matter (PM) emissions for the thermal oxidizer was calculated to be approximately 0.007 lb/hr. As particulate matter emissions result from combustion of non-ash forming pipeline quality natural gas and VOCs from defined sources with a maximum flow rate, particulate matter emissions will not vary. Also, at this low hourly particulate matter emissions rate, which is less than a hundredth of a pound per hour, opacity of 20% or greater is not expected.

2) Likelihood of a violation of the requirements

   Y-2124 (emission point E-655) is a thermal oxidizer that has approximately 0.007 lb/hr maximum PM potential emissions, and this thermal oxidizer is combusting

non-ash forming compounds composed of a VOC waste gas stream and pipeline quality natural gas as a supplemental fuel. Therefore, there is no smoke or opacity expected to form from this combustion. The likelihood of a violation of 20% or greater is low since the maximum PM potential emissions were calculated to be less than a hundredth of a pound per hour.

3) Whether add-on controls are being used for the unit to meet the emission limit

The Y-2124 thermal oxidizer is used to control emissions of VOCs and HAPs, so the thermal oxidizer is the add-on control device for VOCs and HAPs, while also being the potential source of particulate matter emissions and opacity from the by-products of combustion. Therefore, controls are not being used to meet the opacity limits of 45CSR6.

4) The type of monitoring, process, maintenance, or control equipment data already available for the emission limit.

Since the initial Title V permit was issued in 2006, the facility has demonstrated compliance with the 45CSR§6-4.3 20% opacity limit for emission point E-655 through recordkeeping of maintenance and malfunctions of the thermal oxidizer Y-2124 as outlined in conditions 4.4.2 and 4.4.3. Due to the small amount of particulate matter emitted hourly when compared to the 20% opacity limit, compliance through inspection and preventive maintenance of the thermal oxidizer has been effectively used since the initial Title V permit was issued in 2006. Additionally, the thermal oxidizer must be operated and maintained at a temperature of no less than 1832 ℉ with an interlock that prevents venting to the thermal oxidizer if the combustion chamber temperature falls below this limit (see Title V condition 4.1.5). Soot is formed as a result of incomplete combustion of hydrocarbons, so monitoring the temperature of the thermal oxidizer will demonstrate proper operation of the thermal oxidizer resulting in complete combustion, less formation of soot, and compliance with the opacity limit.

5) The type and frequency of the monitoring requirements for similar units at other facilities.

45CSR6, “Control of Air Pollution from Combustion of Refuse,” establishes emission standards for particulate matter and requirements for activities involving incineration of refuse. “Incineration” is defined under Section 2.7 of 45CSR6 as “the destruction of combustible refuse by burning in a furnace designed for that purpose. For the purposes of 45CSR6, the burning in a flare or flare stack, thermal oxidizer or thermal catalytic oxidizer stack shall be considered incineration.” The rule also defines “industrial waste incinerators” which are used “to incinerate gaseous, liquid, semi-liquid and/or solid by-product waste from industrial sources”; and “pathological waste” which is “waste material consisting of only human or animal remains, anatomical parts or tissue, the bags or containers used

> to collect and transport the waste material, and animal bedding (if applicable)." 45CSR6 regulates a variety of sources of particulate matter emissions from combustion of refuse and the same opacity limits are applied universally to flares, thermal oxidizers, thermal catalytic oxidizers, industrial waste incinerators, and human and animal crematories. While 20% is a high opacity limit for flares and thermal oxidizers which have little to no opacity because they combust VOCs and pipeline quality natural gas, it is not for a crematory or solid waste incinerator.
>
> To demonstrate compliance with the opacity limits of 45CSR§6-4.3, the rule does not specify any periodic monitoring. Title V allows for "gap-filling" if monitoring is not sufficient to demonstrate compliance with the opacity limit. For thermal oxidizers combusting VOCs with pipeline quality natural gas as a supplemental fuel, opacity monitoring is typically not required because of the low potential for particulate matter emissions and opacity. Compliance is typically demonstrated through proper operation of the thermal oxidizer in the form of monitoring the temperature of the combustion chamber. For Title V facilities, applicability review under 40 C.F.R. 64, Compliance Assurance Monitoring (CAM), is also required. The thermal oxidizer is not defined as a pollutant specific emissions unit (PSEU) for particulate matter emissions under CAM because it is not used to control particulate matter to meet the opacity limits of 45CSR§6-4.3 and therefore CAM does not apply.

For opacity limits which apply to emission point E-655 (the Y-2124 thermal oxidizer), visible emissions readings at night or during adverse weather conditions may not be possible, but other methods of monitoring for compliance are being used such as monitoring the combustion chamber temperature of the thermal oxidizer along with maintenance and malfunction records. Commenters suggested that the permit must require COMS (Continuous Opacity Monitoring) to demonstrate compliance with the applicable opacity limit of 20% for the thermal oxidizer. Considering the rather insignificant amount of particular matter emitted from the thermal oxidizer, the suggested compliance demonstration method is unnecessary and excessive. Title V does not require continuous monitoring for all emission points and recognizes other methods for compliance demonstration, such as periodic monitoring.

Based on review of the monitoring for the 20% opacity limit for emission point E-655 (the Y-2124 thermal oxidizer) using the five factors suggested by EPA, DAQ has determined that the current monitoring of the thermal oxidizer's combustion chamber temperature already included in the Draft Title V permit is adequate considering the insignificant amount of particulate matter emitted (0.007 lb/hr).

20% Opacity Limit from 45CSR§7-3.1 for E-3128, E-3228, E-3328, E-5228A, E-310

1) The variability of emissions from the unit in question.

   Particulate matter emissions from E-3128, E-3228, E-3328, and E-310 are fugitive in nature and due to plant personnel manually adding bags of dry solid catalyst, additives, or inhibitors to a mixing vessel, blending tank, or reactor which are located inside a building. These emissions occur for 11 to 35 minutes every 7 to 26 hours and maximum potential uncontrolled particulate matter emissions are rather insignificant at 0.04 tpy and less than 0.01 lb/hr if materials were being added to E-3128, E-3228, E-3328, and E-310 simultaneously which is typically not the case.

   E-3128, E-3228, E-3328, and E-310 each have fume hoods and when materials are manually added, these fume hoods are activated and the excess particulate matter is routed to the E-5228A dust collection system. Emissions collected by E-5228A are sent through an air filter prior to being vented outside the building. Dust collector E-5228A is the only emission point venting outside of the building.

   The particulate matter emissions are not variable as they are based on the addition of solid raw materials at maximum production rates limited by conditions 8.1.1 and 8.1.5.

2) Likelihood of a violation of the requirements

   It is unlikely that E-3128, E-3228, E-3328, or E-310 will have emissions greater than 20% opacity since all uncontrolled particulate matter emissions are contained within the facility's building at rates of less than 0.04 tpy and 0.01 lb/hr.

   E-5228A's potential uncontrolled particulate matter emissions are 0.04 tpy and less than 0.01 lb/hr if material is being manually added to E-3128, E-3228, E-3328, and E-310 simultaneously. However, raw materials are not added to each vessel at the same time.

3) Whether add-on controls are being used for the unit to meet the emission limit

   Add-on controls are not being used to meet the 20% opacity limit for emission points E-3128, E-3228, E-3328 and E-310 as these emission points are vented inside the building or to the E-5228A dust collection system.

   E-5228A has a filter to collect particulate matter prior to venting to the atmosphere, but at a maximum uncontrolled particulate matter emission rate of less than 0.01 lb/hr, the filter is not being used to meet the 20% opacity limit.

4) The type of monitoring, process, maintenance, or control equipment data already available for the emission limit.

The facility demonstrates compliance with the 45CSR§§7-3.1 and 5.1 limits for emission points E-3128, E-3228, E-3328, or E-310 through proper operation of the equipment as outlined in condition 8.1.28 since the emission points are located inside a building and maximum potential emissions are less than 0.01 lb/hr.

E-5228A is the dust collection system, which consists of fume hoods on E-3128, E-3228, E-3328, and E-310 and emissions are routed through an air filter prior to venting outside of the building. The maintenance and replacement of this filter is covered under permit conditions 3.4.1, 8.4.1 and 8.4.2.

5) The type and frequency of the monitoring requirements for similar units at other facilities.

A similar type of manufacturing facility where solid raw materials are added into the process manually and the uncontrolled particulate matter emission rate is less than 0.01 lb/hr, would have similar monitoring requirements as Covestro LLC has for E-3128, E-3228, E-3328, E-5228A, and E-310, such as opacity monitoring at the request of the Director and record keeping of filter changes.

For opacity limits which apply to emission points E-3128, E-3228, E-3328, E-5228A, and E-310 within Flexible Polyols Production, visible emissions readings at night or during adverse weather conditions may not be possible, but use of COMS to demonstrate compliance with an applicable opacity limit of 20% for manual addition of solid raw material to the process with uncontrolled potential emissions of particulate matter of less than 0.01 lbs/hr is excessive and not practical. It should be noted that CAM is not applicable to these emission units because they do not use a control device to demonstrate compliance with the 20% opacity limit and do not have uncontrolled particulate matter emissions over 100 tons per year.

Based on review of the monitoring for the 20% opacity limit for E-3128, E-3228, E-3328, E-5228A, and E-310 using the five factors suggested by EPA, DAQ has determined that the current monitoring is adequate.

Comment IV

IV. THIS PERMIT PRESENTS SIGNIFICANT ENVIRONMENTAL JUSTICE CONCERNS THAT DAQ MUST CONSIDER AND ADDRESS

Commenters stated that both EPA and its Office of Inspector General have specifically identified the South Charleston Plant as one of 25 “high-priority” ethylene oxide-emitting facilities that contribute to elevated estimated cancer risks equal to or greater than 100 in one million at the census tract level. Commenters also stated that according to the EPA’s

2014 National Air Toxics Assessment (NATA, since renamed "AirToxScreen"), released in 2018, of the 90 census tracts nationwide identified with the highest cancer risk due to ethylene oxide, six census tracts were located in Kanawha County and that in West Virginia, the top eleven census tracts by cancer risk were all located in Kanawha County in the vicinity of the Institute and South Charleston facilities. Additionally, Commenters stated that ProPublica mapped cancer risk caused by industrial air emissions using data from EPA's Risk-Screening Environmental Indicators model and found the area within and around the South Charleston Plant had an excess cancer risk from industrial pollution of 1 in 630 (or 1,587 in 1 million which is 16 times greater than EPA's acceptable risk benchmark of 1 in 10,000. Commenters said that because of the cancer risks from ethylene oxide, there was a compelling need for increased, focused attention to ensure proper compliance with all Title V requirements. Commenters also stated that to address environmental justice concerns, DAQ should reopen and/or extend the comment period to allow full and effective public participation.

DAQ Response to Comment IV

Cancer Risk

WV DAQ routinely checks EPA's AirToxScreen (formerly the National Air Toxics Assessment or NATA) to find any area in WV that shows potential elevated areas of concern for air toxics. This is a screening tool, meant to identify areas of potential concern, which uses simplified assumptions including:

- All emissions come from one or two locations at a facility
- Weather data that is modeled
- Assumes that a person is in the same location 24 hours a day, 365 days a year, for 70 years
- Assumes that year's emissions data is constant over 70 years

AirToxScreen looks at cumulative impacts from all air toxics at the census tract/block level. This includes multiple facilities, background pollutants, on-road and off-road emissions, and secondary formation of pollutants. WV DAQ uses AirToxScreen as a starting point, and refines this information to get more exact information.

Specifically regarding the ethylene oxide emitting facilities in the Kanawha Valley, DAQ has done the following:

- Obtained site specific emissions amounts and locations from the facilities
- Obtained site specific weather data

- Modeled the areas surrounding the facility
- Performed a short-term sampling project using a modified Method TO-15 in the Kanawha Valley, as well as background locations in Guthrie and Buffalo, WV, where there are no known sources of EtO
- Performed background sampling during an EPA required Section 114 request for facilities to perform EtO sampling
- Performed a short-term modified Method 327 EtO sampling project using six canisters at the Institute Industrial Site to determine consistency in the results, as well as background locations in Buffalo, WV, where there are no known sources of EtO
- Asked West Virginia Department of Health and Human Resources (DHHR) to look at the National Cancer Registry to determine if there are higher amounts of EtO related cancers (breast cancer, leukemia, and lymphoma) in the Kanawha Valley, and if there were any clusters around the facilities
- Developed an EtO webpage that provides information about the monitoring projects and report, DHHR findings, public meeting presentations, and other information regarding EtO in the Kanawha Valley
- Attends monthly community advisory panel meetings in South Charleston and Institute to answer questions and inform the members of the status of permitting actions including Title V renewals, monitoring projects, the proposed revised PEPO MACT, and other issues related to EtO
- Held 8 public meetings and 3 public hearings to answer questions and inform the public on;
    - Potential risk
    - Sampling results
    - DHHR findings
    - Collaborative Agreements
    - Title V renewals

The findings from DHHR showed that of the 55 counties in WV, Kanawha County was not in the top 10 per capita for any EtO related cancer. The findings also showed that there were no clusters of these cancers around the facilities.

The findings from the sampling project showed that in several cases, higher concentrations of EtO were found in areas where there are no known sources of EtO rather than at the fenceline or onsite at the EtO facilities.

The collaborative agreements with the EtO emitting facilities has helped in part to reduce EtO emissions from 2014 to 2023 in Institute by 67% and South Charleston by 76%. These collaborative agreements between the EtO emitting facilities were voluntary and the state-only enforceable commitments were not addressed by current law or regulation. These actions were the result of meetings and negotiations between the EtO emitting facilities and DAQ.

Information regarding EtO can be found on DAQ's EtO webpage:
https://dep.wv.gov/key-issues/Pages/EtO.aspx

Ensuring Proper Compliance with the Title V

The Title V program was established in the 1990s to issue operating permits that include all of a facility's applicable air requirements. Section 5.1 of 45CSR30 states that each Title V operating permit issued shall include all applicable requirements that apply to the source at the time of permit issuance. The Title V operating permit itself does not establish new emission or operating limitations. The Title V permit is a comprehensive document that outlines a facility's air pollution control requirements. Emission and operating limitations included in the Title V permit are established through new source review (NSR) permits (45CSR13 and 45CSR14), consent orders, state rules, and federal regulations. The Title V program does not provide WV DAQ the authority to modify limits established under these other rules and regulations. The Draft Title V permit for Covestro LLC's South Charleston Plant which went out for public comment on Tuesday, January 28, 2025 included all the source's applicable air regulatory requirements, specifically requirements from their minor NSR permit (45CSR13), state rules, and federal regulations. The Draft Title V permit also included requirements for monitoring, compliance certification, reporting and other measures intended to assure compliance with the facility's applicable requirements. Where Commenters posed questions about the adequacy of the monitoring included in the Draft Title V permit, the DAQ referred to EPA's five factors that permitting authorities may consider when determining appropriate monitoring for a particular facility as outlined in EPA's order on Petition No. III-2023-16 for the Union Carbide Corporation Institute Facility's Title V permit and these determinations were included in this response to comments.

Extension or Reopening of the Comment Period

DAQ has provided the community with more notice than required under 45CSR30. DAQ is required under 45CSR30 to publish a Class I legal ad in a newspaper of general circulation in the area where the emission will occur which begins a 30 day comment period; and to notify persons on a mailing list for which West Virginia Department of Environmental Protection has a page on their website that allows anyone to sign up for notifications for the entire state of West Virginia or by select counties. In addition to the public notification requirements specified under 45CSR30, for Covestro LLC and the

other EtO emitting facilities in South Charleston and Institute, DAQ has a webpage which provides information about EtO and has a signup for a separate EtO Mailing List. Notification of the Draft Title V permit for Covestro's South Charleston Facility was included on this webpage and sent out via the EtO Mailing List at the time the notice was published; and the Draft Title V Permit, Draft fact sheet, Title V renewal application, the current Title V Permit, current fact sheet, and modifications to the current permit were all included on DAQ's "Title V Permits" webpage. Also, as previously stated, updates on the Title V permit renewal status of the EtO emitting facilities in Kanawha County were regularly communicated at the community advisory panel meetings. Additionally, Mike Tony wrote an article in the *Charleston Gazette-Mail* providing information about the Draft Title V permit and provided a link to the permitting documents and the contact information to provide comments. With all this notification for the Draft Title V permit, the only comments received were those provided by the Commenters. Due to the level of public interest received on this Draft Title V permit, DAQ does not see the necessity to provide additional notice or an extended comment period.

DAQ typically issues Title V permit renewals within their 45CSR30 statutory deadline of 12 months from receipt of a complete application, but because of public interest in EtO emitting facilities in Kanawha County, this has not been possible. DAQ Title V permits are issued for a fixed term of five (5) years and must be renewed. A permit renewal application is timely if it is submitted at least six (6) months prior to the date of permit expiration. Covestro LLC submitted a complete application to renew their Title V permit for the South Charleston Plant on April 1, 2022. The renewal application was due on April 6, 2022. Therefore, because the application for the South Charleston Plant was timely and complete, Covestro LLC received an application shield which allows them to continue to operate the South Charleston Plant under the conditions of their current Title V permit until the Secretary takes final action on this Title V permit renewal application. This means that the facility is operating under their current Title V permit issued on October 6, 2017 (as last modified on December 14, 2020 under minor modification MM02). The current permit does not include reductions in EtO potential emissions (annual facility-wide emission limit for ethylene oxide is 0.71 tpy, not the current limit of 0.25 tpy) and it still contains requirements for the Ethylene Oxide Distribution equipment. It is in the best interest of the community surrounding this facility for Covestro LLC to have an updated Title V permit with the substantial reductions in potential EtO emissions and other changes, than to further delay renewal of the Title V permit with a reopening or extension of the comment period, especially when there appears to be a lack of significant community interest at this time.

Conclusion

In conclusion, the DAQ has included all Covestro LLC's applicable requirements in their Title V renewal permit and a response to the comments received on February 27, 2025 is being provided. Additionally, DAQ has worked to reduce the potential health risks associated with ethylene oxide through the voluntary ethylene oxide emissions reductions implemented in the collaborative agreement and minor NSR permit. The Title V renewal permit for Covestro LLC's South Charleston Plant was issued today. Should you have any questions regarding this response, please contact me at (304) 414-1282.

Sincerely,

Nikki B. Moats

Digitally signed by: Nikki B. Moats
DN: CN = Nikki B. Moats email = nikki.b.moats@wv.gov C = US O = West Virginia Department of Environmental Protection OU = Division of Air Quality
Date: 2025.10.02 12:21:13 -04'00'

Nikki B. Moats
Title V Engineer