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Via Email and U.S. Mail

Memphis and Shelby County Air Board
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Re: Appeal of decision re: Memphis Community Against Pollution's petition for an emergency air pollution order

To the Members of the Memphis and Shelby County Air Board:

Pursuant to Memphis Municipal Code section 9-12-12(D)(3) and (E), Memphis Community Against Pollution (MCAP) appeals the Shelby County Health Officer's decision to reject MCAP's petition for an emergency air pollution order under Memphis Municipal Code section 9-12-9 to protect the health of the South Memphis community by ordering Sterilization Services of Tennessee to cease operations or discontinue its ethylene oxide pollution.

GROUNDS FOR APPEAL

Sterilization Services of Tennessee uses large amounts of ethylene oxide to sterilize medical equipment. Ethylene oxide is a cancer-causing chemical derived from fossil fuel production. Last summer, EPA announced its intent to adopt more protective ethylene oxide air pollution standards for medical sterilization facilities because the chemical is *60 times more toxic* than EPA previously understood. But any protections afforded by EPA's new rule could be years away. Meanwhile, Sterilization Services of Tennessee currently operates 24 hours a day, seven days a week in South Memphis, exposing predominantly Black residents, including children, to ethylene oxide in neighborhoods overburdened with air pollution from myriad mobile and industrial sources. Sterilization Services of Tennessee has refused to take any action to reduce its ethylene oxide pollution before EPA issues a final rule.

The Shelby County Health Officer has a duty to issue an emergency order when he "finds that a generalized condition of air pollution exists and that it creates an emergency requiring immediate action to protect human health or safety." Memphis Muni. Code § 9-12-9(A). Even where there is not a generalized condition of air pollution, the Health Officer may issue an emergency order if he "finds that emissions from the operation of one or more air contaminant sources is causing imminent danger to human health or safety." *Id.* § 9-12-9(B).

On February 7, 2023, MCAP submitted to the Shelby County Health Officer a petition for an emergency order requiring Sterilization Services of Tennessee to shut down or stop polluting the South Memphis air with cancer-causing ethylene oxide.[1] MCAP's petition presented evidence showing that an emergency order is warranted under either section 9-12-9(A) or (B).[2]

On February 9, 2023, the Shelby County Health Department (Department) issued a press release regarding its activities related to the regulation of ethylene oxide from Sterilization Services of Tennessee.[3] In particular, the Department stated:

> Sterilization Services of Tennessee meets the current federal, state, and local legal standards for EtO emissions. The Clean Air Act does not currently allow Sterilization Services of Tennessee to be held to legal standards higher than existing ones.[4]

The Department's decision is incorrect. First, MCAP's petition alleges that Sterilization Services of Tennessee's ethylene oxide emissions violate the standards set forth in section 9-12-9, warranting an emergency order to protect the public health of the South Memphis community. Section 9-12-9 is a local legal standard to which Sterilization Services of Tennessee must be held. The Department's decision does not address whether an emergency order is warranted under section 9-12-9. Second, to the extent that the Department's authority derives from the Tennessee Air Quality Act and the federal Clean Air Act, both of those statutes include similar emergency order provisions to address public health emergencies. The United States Environmental Protection Agency (EPA) has expressly acknowledged that state agencies can address the threat of ethylene oxide pollution before any new rulemaking by EPA, and the Tennessee Air Pollution Control Board has delegated administration of air pollution control to the Department. Accordingly, the Department has authority to act *now* to reduce or eliminate ethylene oxide pollution from Sterilization Services of Tennessee.

Because of the Department's incorrect legal decision, the Health Officer did not make any findings on the merits of MCAP's petition. MCAP respectfully requests that the Air Board convene a hearing as required by section 9-12-12(E), and, after the hearing, issue an order determining that the Health Officer has authority to issue an emergency order addressing Sterilization Services of Tennessee's ethylene oxide pollution and remanding the petition to the Health Officer to consider MCAP's petition on its merits. To the extent that the Department's decision is intended to be a decision on the merits of MCAP's petition, MCAP respectfully requests that the Air Board review that decision, make findings supporting the issuance of an

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[1] **Attachment (Att.) 1**, Southern Environmental Law Center on behalf of Memphis Community Against Pollution, Petition for an emergency air pollution order under Memphis Code section 9-12-9 requiring Sterilization Services of Tennessee to cease operations to protect the South Memphis community's health, 1-2 (Feb. 7, 2023) [hereinafter MCAP Petition].
[2] *Id.* at 3-13.
[3] **Att. 2**, *Statement about Ethylene Oxide*, SHELBY CNTY. HEALTH DEP'T (Feb. 9, 2023) [hereinafter Shelby County Response], https://shelbytnhealth.com/CivicAlerts.aspx?AID=316.
[4] *Id.*

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emergency order under section 9-12-9(A) and (B), and issue an order requiring Sterilization Services of Tennessee to cease operations or discontinue its ethylene oxide pollution.

I. The Board has jurisdiction over this appeal.

Memphis Municipal Code section 9-12-12(D)(3) authorizes this Board "to decide appeals from any decisions, rulings, or determinations of the health officer or his or her designated representative under this chapter." On February 7, 2023, MCAP submitted to the Health Officer a petition for an emergency order addressing Sterilization Services of Tennessee's ethylene oxide pollution.[5] In response, on February 9, 2023, the Health Department issued a press release claiming that it lacks legal authority to address ethylene oxide pollution caused by Sterilization Services of Tennessee.[6] Neither MCAP nor its counsel have received any other correspondence or response from the Department or its counsel. Because it disclaims the Department's legal authority to act, the press release functions as a determination regarding MCAP's legal right to an emergency order and as a denial of MCAP's petition. It is therefore a "decision, ruling, or determination" reviewable by this Board. Memphis Muni. Code § 9-12-12(D)(3); *cf.* Tenn. Code Ann. § 4-5-102 (7) (defining "order" as an "agency action of particular applicability that determines the legal rights, duties, privileges, immunities or other legal interests of a specific person or persons").

Memphis Municipal Code section 9-12-12(E) authorizes "any person taking exception to and who is uniquely affected by any decision, ruling, requirement, rule, regulation, or order of the health officer" to take an appeal to this Board. As a nonprofit organization incorporated under Tennessee law, Memphis Community Against Pollution is a "person" within the meaning of this provision. Memphis Muni. Code § 9-12-1 ("For the purpose of enforcement of the definitions, chapter 1200-3-2, of the Tennessee Air Pollution regulations, as effective on December 31, 2000, is adopted by reference as a portion of this code"); Tenn. Comp. R. & Reg. 1200-03-02-.01 (1)(ll) ("Person is any individual, partnership, copartnership, firm, company, corporation, association, joint stock company, trust, estate, political subdivision, an agency, authority, Commission, or Department of the United States Government, or of the State of Tennessee Government; or any other legal entity, or their legal representative, agent, or assigns").

MCAP takes exception to and is uniquely affected by the Department's decision regarding MCAP's petition for an emergency order. MCAP's mission is to pursue environmental justice for Black communities in South Memphis, to protect the health and environment of the area, and to prevent environmental racism. The Department's decision frustrates MCAP's mission by wrongly disclaiming local authority to address an urgent air quality and public health issue in South Memphis that disproportionately affects low-income, predominantly Black residents. MCAP also represents the interests of its supporters, some of whom reside in Mallory Heights and other neighborhoods in South Memphis that are directly affected by the ethylene oxide pollution from the Sterilization Services of Tennessee facility and from other toxic air pollution sources that burden the community. For example, one MCAP supporter has lived roughly two miles from the plant for twenty-five years. A cancer survivor who takes care of her

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[5] MCAP Petition.

[6] Shelby County Response.

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school-age granddaughter, the MCAP supporter now minimizes the amount of time she and her granddaughter spend outside because of her reasonable fear for carcinogenic ethylene oxide pollution. The Health Department's refusal to abate ethylene oxide pollution impairs the MCAP supporters use and enjoyment of her property and threatens her and her family's health.

This appeal is timely filed. *See* Memphis Muni. Code § 9-12-12(E) ("appeals shall be made within 15 days after receiving notice of such decision, ruling, requirement, rule, regulation, or order"); *id.* § 1-4-2 (computation of time excludes the first and includes the last day).

Accordingly, the Board has jurisdiction over this appeal.

II. The Department erred in determining that it lacks legal authority to address Sterilization Services of Tennessee's ethylene oxide pollution.

MCAP petitioned the Department to issue an emergency order under section 9-12-9 of the Memphis Municipal Code. That provision authorizes the Health Officer to issue emergency air pollution orders in two scenarios:

> [A] Any other provision of the law notwithstanding, if the health officer finds that a generalized condition of air pollution exists and that it creates an emergency requiring immediate action to protect human health or safety, the health officer shall order persons causing or contributing to the air pollution to reduce or discontinue immediately the emission of air contaminants. . . .
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> [B] In the absence of a generalized condition of air pollution of the type referred to in subsection A of this section, if the health officer finds that emissions from the operation of one or more air contaminant sources is causing imminent danger to human health or safety, he or she may order the person responsible for the operation in question to reduce or discontinue operations immediately[.]

Memphis Muni. Code § 9-12-9. MCAP's petition alleges that Sterilization Services of Tennessee's ethylene oxide emissions violate the standards set forth in section 9-12-9, warranting an emergency order to protect the public health of the South Memphis community.

The Department claims that Sterilization Services of Tennessee "meets the current federal, state, and local legal standards for EtO emissions."[7] But the Department also recognizes that it "derives its legal authority in air pollution matters from *Shelby County Government*, the State of Tennessee, and the U.S. Environmental Protection Agency."[8] Section 9-12-9 is a local legal standard, enacted by the Shelby County Government, to which Sterilization Services of Tennessee must be held. If Sterilization Services of Tennessee's ethylene oxide pollution is contributing to a generalized condition of pollution creating an emergency, or is causing imminent danger to human health, the Health Officer can order the facility to cease the activities that are causing such harm. The Department's decision does not expressly address whether an

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[7] *Id.*

[8] *Id.* (emphasis added).

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emergency order is warranted under section 9-12-9. Therefore, its decision that Sterilization Services of Tennessee meets "local legal standards for EtO emissions" lacks a reasoned basis.

The Department also unreasonably concludes that "[t]he Clean Air Act does not currently allow Sterilization Services of Tennessee to be held to legal standards higher than existing ones."[9] To the extent that the Department's authority derives from the Tennessee Air Quality Act and the federal Clean Air Act, both of those statutes include similar provisions to address public health emergencies like the ethylene oxide emissions at issue in MCAP's petition. Therefore, MCAP is not asking for Sterilization Services of Tennessee to be held to any standards that are "higher than existing ones," but instead is asking the Department to exercise authority that exists at the local, state, and federal levels.

Section 303 of the federal Clean Air Act provides:

> *Notwithstanding any other provision of this chapter*, the Administrator, upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to public health or welfare, or the environment, may bring suit on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary.

42 U.S.C. § 7603. EPA guidance interpreting Section 303 of the Clean Air Act specifically describes the provision as a "'gap-filling' authority, providing a basis for injunctive relief for a wide range of endangerment scenarios, *regardless of a pollution source's compliance or noncompliance with any provision of the Act*." [10] (Emphasis added.) In 2021, EPA Region 4 issued an emergency administrative order under Section 303 to address hydrogen sulfide emissions from a paper and pulp mill in South Carolina without finding that those emissions violated any other provision of the Clean Air Act.[11] The order required the paper and pulp mill to reduce emissions and install and operate fenceline monitoring equipment. The 1999 EPA Guidance also explains that EPA can use its authority under Section 303 to address air pollution that threatens harm—in other words, where there is a risk of harm, rather than a showing that harm has already occurred.[12]

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[9] *Id.*

[10] **Att. 3**, Memorandum from Eric V. Schaeffer, Dir., Off. Regul. Enf't, Off. Enf't & Compliance Assurance, to Addresses, on Transmittal of "Guidance on Section 303 of the Clean Air Act," 1 (Apr. 1, 1999) [hereinafter "1999 EPA Guidance"], https://www.epa.gov/sites/default/files/2021-05/documents/transmittalofguidanceonsection303ofcaa040199.pdf.

[11] **Att. 4**, U.S. Environmental Protection Agency Region 4, Clean Air Act Emergency Order, *In the Matter of New-Indy Catawaba LLC d/b/a New-Indy Containerboard* 1-19 (May 13, 2021), https://response.epa.gov/sites/15198/files/New%20Indy%20Order%205132021.pdf.pdf (last visited Feb. 23, 2023).

[12] 1999 EPA Guidance, at 3–5.

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The Tennessee Air Quality Act similarly authorizes the commissioner to issue emergency orders:

> *Any other law to the contrary notwithstanding*, if the commissioner finds that emissions from the operation of one (1) or more air contaminant sources are causing imminent danger to human health and safety, the commissioner may, with the approval of the governor, order the person or persons responsible for the operation or operations in question, or the person or persons causing or contributing to the air pollution, to reduce or discontinue immediately the emission of air contaminants…

Tenn. Code Ann. § 68-201-109 (emphasis added). This authority is similarly a "gap-filling" provision that allows the commissioner to address air pollution that is an imminent danger to public health.

Memphis and Shelby County have adopted their own air quality ordinance pursuant to the Tennessee Air Quality Control Act. Tenn. Code Ann. § 68-201-115(a); *id.* § 68-201-202(a). Memphis and Shelby County's ordinance must be "not less stringent than the standards adopted for the state." Tenn. Code Ann. § 68-201-115(a). Those provisions must be "adequately enforced." Tenn. Code Ann. § 68-201-115(b)(3)(B). In the most recent certificate of exemption granted in June 2022, the Tennessee Air Pollution Control Board authorized to Memphis and Shelby County to administer its own enforcement and compliance ordinances as well as to issue emergency stop work orders.[13] Accordingly, section 9-12-9 is a relevant standard against which Sterilization Services of Tennessee's ethylene oxide air pollution must be evaluated by the Department.

It is not a legitimate answer to state that the Department "will ensure that any revised federal regulations regarding [ethylene oxide] are enforced as quickly as possible in Shelby County."[14] EPA has expressly acknowledged that state agencies can address the threat of ethylene oxide pollution before any new rulemaking by EPA. EPA's website states:

> The responsibility for managing air quality in the U.S. is shared by EPA and state, local and tribal air agencies. *Several states are working to address EtO in their jurisdictions – often faster than what EPA's rulemaking process can accomplish.* For example, in Georgia, the state worked with two commercial sterilizers in the Atlanta area, which have installed equipment to significantly reduce EtO emissions. In Illinois, a commercial sterilizer installed

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[13] **Att. 5**, Tennessee Air Pollution Control Board, *In the Matter of Shelby County, Tennessee, Et al., Certificate of Exemption,* Order No. 22-008, at 2-3 (Jun. 8, 2022), https://www.tn.gov/content/dam/tn/environment/boards/documents/apc-board/2022-meetings/apc-board_packet_june-08-22.pdf.pdf.

[14] Shelby County Response.

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> state-of-the art pollution controls as required by a new state law. And in Missouri, a commercial sterilizer is voluntarily installing pollution controls. EPA has provided technical support to air agencies as part of this work. In addition, EPA is coordinating with air agencies to share information with communities about the risks from long-term exposure to EtO in the outdoor air.[15]

In fact, as referenced on EPA's website, the Georgia Department of Environmental Protection obtained the voluntary agreement of a sister commercial sterilizer to Sterilization Services of Tennessee—Sterilization Services of Georgia—to install additional pollution control equipment.[16] Although the Department is a local agency rather than a state agency, it has been granted authority by the Tennessee Air Pollution Control Board to administer its own air pollution ordinance.[17] Thus, according to EPA's own statements on its website, and contrary to the Department's decision, the Department has the authority to address ethylene oxide air pollution in Memphis and Shelby County *before* the EPA rulemaking is complete.

III. An emergency order is warranted under section 9-12-9(A) or (B) of the Memphis Municipal Code.

To the extent that the Department's decision is intended to be a decision on the merits of MCAP's petition, the Shelby County Health Officer erred by failing to find that an emergency order is warranted. The Shelby County Health Officer and this Board must exercise emergency powers under Memphis's local air pollution control law to order Sterilization Services of Tennessee to reduce or discontinue emitting ethylene oxide or to shut down its operations.

Sterilization Services of Tennessee's highly toxic ethylene oxide air pollution is an emergency that must be immediately addressed at the local level. Unless the Health Officer and this Board act, South Memphis children and families will continue to be exposed to harmful levels of this cancer-causing chemical, potentially for many more years.

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[15] **Att. 6**, *What EPA Is Doing to Address Ethylene Oxide Emissions and to Learn More About the Chemical*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/what-epa-doing-address-ethylene-oxide-and-learn-more-about. (last visited February 23, 2023).

[16] **Att. 7**, Letter from Karen D. Hays, Ga. Env't Prot. Div., to Eric Welch, Sterilization Services Georgia, re: Request for Permit Modification (Sept. 13, 2019), available at https://epd.georgia.gov/sterilization-services-georgia-new-materials. (last visited February 23, 2023).

[17] The Tennessee Department of Environment and Conservation has referred "concerned citizens" back to the Shelby County Health Department for questions regarding Sterilization Services of Tennessee. *See* **Att. 8**, Letter from David Salyers, Comm'r, Tenn. Dep't Env't & Conservation, to Concerned Citizen (January 31, 2023) ("Sterilization Services of Tennessee in Memphis is under the jurisdiction of the Shelby County Health Department's local air program. . . We encourage you to reach out to the Shelby County Health Department if you have specific questions regarding the facility.").

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A. Both the "generalized condition of pollution" and "imminent danger" scenarios in the Memphis Code warrant an emergency air pollution order directing Sterilization Services of Tennessee to discontinue emissions or cease operations.

Last summer, the U.S. Environmental Protection Agency announced its intent to adopt more protective ethylene oxide air pollution standards for medical sterilization facilities because the chemical is *60 times more toxic* than EPA previously understood.[18] Long term exposure to ethylene oxide has been linked to spontaneous miscarriage in expecting mothers, increased cancer risks, muscle weakness, impaired thinking and memory, genetic damage, and nerve damage.[19] Due to the genetic damage caused by ethylene oxide and the increased rate of DNA replication in children, the potential damage to children from ethylene oxide is even greater.[20] One year's worth of exposure to ethylene oxide represents a greater increase in the lifetime cancer risk for a child than an adult.[21]

Populations at greater risk are those living or working near facilities releasing ethylene oxide, especially for long durations.[22] A study done by the Illinois Department of Public Health found increased rates of cancers associated with ethylene oxide in women and girls who lived in the area around a commercial sterilization facility similar to Sterilization Services of Tennessee.[23] Similarly, the Texas Department of State Health Services identified increased rates of cancers associated with ethylene oxide around a commercial sterilizer in Laredo, Texas.[24]

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[18] **Att. 9**, *Frequent Questions About Ethylene Oxide (EtO)*, U.S. ENV'T PROT. AGENCY (Jan. 13, 2023), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/frequent-questions-about-ethylene-oxide-eto; **Att. 10**, NAT'L CTR. FOR ENV'T ASSESSMENT, OFF. RSCH & DEV., U.S. ENV'T PROT. AGENCY, EVALUATION OF THE INHALATION CARCINOGENICITY OF ETHYLENE OXIDE: IN SUPPORT OF SUMMARY INFORMATION ON THE INTEGRATED RISK INFORMATION SYSTEM (Dec. 2016), https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1025tr.pdf.

[19] **Att. 11**, *Ethylene Oxide "Gas" Sterilization*, CTRS. FOR DISEASE CONTROL & PREVENTION (Sept. 18, 2016) shorturl.at/ITXZ7. *See also* **Att. 12**, Occupational Safety & Health Admin., *OSHA Fact Sheet: Ethylene Oxide*, (2002), https://www.osha.gov/sites/default/files/publications/ethylene-oxide-factsheet.pdf (explaining the potential harm of ethylene oxide on workers).

[20] *Frequent Questions About Ethylene Oxide (EtO)*, *supra* note 18.

[21] *Id.*

[22] **Att. 13**, U.S. Dep't Health & Hum. Servs., *ATSDR Clinician Brief: Ethylene Oxide*, 3 (2022), https://www.atsdr.cdc.gov/emes/health_professionals/documents/Clinician-Brief-Ethylene-Oxide-508.pdf.

[23] **Att. 14**, ILL. DEP'T PUB. HEALTH, CANCER INCIDENCE ASSESSMENT NEAR STERIGENICS IN WILLOWBROK, IL, 1995-2015 3–4 (Mar. 29, 2021), https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/sterigenicswillowbrookcancer-investigation-final.pdf.

[24] **Att. 15**, TEX. DEP'T STATE HEALTH SVCS., ASSESSMENT OF THE OCCURRENCE OF CANCER LAREDO, TEXAS 2006-2019 (Oct. 21, 2022), https://www.dshs.texas.gov/sites/default/files/CHI-ESTB/CSum%2022002_Full%20Report_Final.pdf.

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In October 2022, EPA visited Memphis, and informed the South Memphis community that Sterilization Services of Tennessee is among the 23 commercial sterilizers posing the highest risk to a community's health.[25] But EPA also told the community that any protections afforded by their new rule could be years away.[26]

Meanwhile, Sterilization Services of Tennessee continues to operate 24 hours a day, seven days a week in South Memphis,[27] exposing predominantly Black residents to ethylene oxide in neighborhoods overburdened with air pollution from myriad mobile and industrial sources.[28] The company has refused to take any action to voluntarily reduce emissions before EPA's new rule goes into effect.[29]

Memphis Code section 9-12-9 requires the Shelby County Health Officer to protect the South Memphis community while the EPA rulemaking is pending. Information about the increased toxicity of ethylene oxide,[30] along with EPA's recently-disclosed air modeling showing increased cancer risks of up to 2,000 cases per one million people in the South Memphis community[31] and other evidence described below, create an emergency requiring immediate action to protect human health, and demonstrate that an imminent danger to human health exists in South Memphis.

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[25] **Att. 16**, *Ethylene Oxide and Risk in the Community of Memphis Tennessee Slide Presentation,* U.S. ENV'T PROT. AGENCY, at 11 (Oct. 18, 2022), https://www.epa.gov/system/files/documents/2022-10/Web%20Final_EtO%20Community%20Meeting%20Slides%20SST-%20Memphis.pdf [hereinafter EPA Slide Presentation].

[26] **Att. 17**, Dulce Torres Guzman, *EPA tells South Memphis Residents Little Recourse Exists to Deal with Toxic Emissions,* TENNESSEE LOOKOUT, (Oct. 20, 2022), https://tennesseelookout.com/2022/10/20/epa-tells-south-memphis-residents-little-recourse-exists-to-deal-with-toxic-emissions/.

[27] EPA Slide Presentation, at 24.

[28] **Att. 18**, Chunrong Jia & Jeffrey Foran, *Air Toxics Concentrations, Source Identification, and Health Risks: An Air Pollution Hot Spot in Southwest Memphis, TN*, 81 ATMOSPHERIC ENV'T 112–116 (Dec. 2013), https://www.sciencedirect.com/science/article/abs/pii/S1352231013006948?via%3Dihub#..

[29] **Att. 19**, Keely Brewer, *A Cancer-causing Chemical Has Been on EPA's Radar for Years. Why Is It Still There?*, CHATTANOOGA TIMES FREE PRESS, (Jan. 29, 2023), https://www.timesfreepress.com/news/2023/jan/29/a-cancer-causing-chemical-has-been-on-epas-radar/ ("Sterilization Services of Tennessee appeared on the EPA's list of high-risk facilities in August, but the company has refused to comment until after there are new regulations on the books.")

[30] *Frequent Questions About Ethylene Oxide (EtO)*, *supra* note 18.

[31] **Att. 20**, *Memphis, Tennessee (Sterilization Services of Tennessee),* U.S. ENV'T PROT. AGENCY, (Oct. 21, 2022), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/forms/memphis-tennessee-sterilization-services-tennessee.

1. An emergency order is warranted under the "Generalized Condition" scenario.

Memphis's air pollution ordinance provides, in relevant part:

> *Any other provision of the law notwithstanding*, if the health officer finds that a generalized condition of air pollution exists and that it creates an emergency requiring immediate action to protect human health or safety, the health officer *shall* order persons causing or contributing to the air pollution to reduce or discontinue immediately the emission of air contaminants.

Memphis Muni. Code § 9-12-9 (A) (emphasis added). This provision authorizes the Health Officer to issue an emergency order even if the "persons causing or contributing to the air pollution" are in compliance with other relevant provisions of law—including any relevant environmental permits. *Id.* This provision further *requires* the Health Officer to act if he finds that a "generalized condition of air pollution exists" and that it "creates an emergency requiring immediate action to protect human health." *Id.*

"Generalized" means "involving, applicable to, or affecting the whole"[32] or "involving a lot of people, places, or things."[33] "Generalized condition" mirrors Clean Air Act Section 303's reference to pollution from a "combination of sources (including moving sources)." 42 U.S.C. § 7603. Long-standing EPA guidance interpreting Section 303 similarly contemplates its use to address conditions of air pollution caused by more than one source.[34] EPA recently reaffirmed that the guidance interpreting Section 303 "contemplates consideration of cumulative impacts" in issuing an emergency order.[35]

"Air pollution" means "presence in the outdoor atmosphere of one or more air contaminants in sufficient quantities and of such characteristics and duration as to be injurious to human, plant or animal life, or to property, or which unreasonably interfere with the enjoyment of life and property." Tenn. Comp. R. and Regs. 1200-03-02-.01(1)(d).[36] Ethylene oxide is designated a Hazardous Air Pollutant under the Clean Air Act. 42 U.S.C. § 7412(b)(1).

Substantial evidence exists to support a finding that a "generalized condition of air pollution exists" in the South Memphis community surrounding Sterilization Services of

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[32] *General*, Merriam-Webster. *Generalized* means "made general," so these definitions are from *general*.
[33] *Generalized,* Cambridge Dictionary.
[34] 1999 EPA Guidance at 10–11.
[35] **Att. 21**, OFF. GEN. COUNS., U.S. ENV'T PROT. AGENCY, PUB. NO. 360R22002, EPA LEGAL TOOLS TO ADVANCE ENVIRONMENTAL JUSTICE: CUMULATIVE IMPACTS ADDENDUM 14 (2023).
[36] Memphis Municipal Code incorporates the definitions from Tennessee Regulations. *See* Memphis Muni. Code § 9-12-1 ("For the purpose of enforcement of the definitions, chapter 1200-3-2, of the Tennessee Air Pollution regulations, as effective on December 31, 2000, is adopted by reference as a portion of this code.").

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Tennessee. It is well-established that the community already bears more than its fair share of air pollution burdens. A 2013 study concluded:

> [T]his study identified an air toxics pollution "hot spot" in southwest Memphis, TN. The levels of air toxics are greater than many other industrialized urban regions in the U.S., indicating that this community is at high risk from exposure to ambient air toxics. Stationary, mobile, and secondary sources are significant contributors to concentrations of air toxics, and the racial and economic composition of this region indicates that the effects of pollutants from these sources fall disproportionately on African Americans and individuals with very low-income levels compared with the remainder of the Memphis metropolitan area.[37]

The study observed that residents of Southwest Memphis, which was defined to encompass the area surrounding Sterilization Services of Tennessee, face a cumulative cancer risk that is four times higher than the national average.[38] Contributing sources identified by the study include:

> Twenty-two of the top 30 major emission sources in Shelby County reside in or near southwest Memphis. There are other significant local transportation sources of air pollution, including barge traffic on the Mississippi River, truck and autos on interstate highways, several local rail yards, and air traffic at Memphis International Airport, the busiest airport in the U.S. and second busiest in the world by cargo traffic.[39]

The study called for "more intensive spatial and temporal air quality monitoring throughout the greater Memphis area,"[40] but despite the passage of ten years since the publication of the study, we are not aware of this air monitoring having been conducted by federal, state, or local air pollution authorities.

Nevertheless, publicly available data sets confirm that the community remains a toxic air pollution hot spot. According to the Center for Disease Control's Environmental Justice Index Explorer tool, all of the tracts immediately surrounding Sterilization Services of Tennessee have an Air Toxics Cancer Risk greater than 80%.[41] The 2020 Census for Tract 55, closest to the facility, ranks in the 95% top national percentile for environmental burden, with a high estimated prevalence of asthma.[42] EPA's EJScreen 2.0 shows that the 1-mile buffer zone around Sterilization Services of Tennessee has an Air Toxics Cancer Risk and an Air Toxics Respiratory Hazard Index area of in the 95th-100th percentile in the U.S. for both environmental justice and

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[37] Chunrong Jia, *supra* note 28, at 112.
[38] *Id.*
[39] *Id.*
[40] *Id.*
[41] **Att. 22**, *Environmental Justice Index (EJI) Explorer*, CTRS. FOR DISEASE CONTROL & PREVENTION, (last visited Feb. 6, 2023), https://onemap.cdc.gov/portal/apps/sites/#/eji-explorer.
[42] *Id.*

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pollution and sources indexes.[43] In the 3-mile buffer zone, the Air Toxics percentages remain the same.[44] In addition, a recently-published investigative map developed by ProPublica identified South Memphis as a toxic air pollution hot spot due to the presence of several industrial facilities, including, among others, the Valero Oil Refinery, Nucor Steel Mill, and Stella Jones, a pressure-treated wood manufacturer.[45] The life expectancy at birth of someone living in the same census tract as Sterilization Services of Tennessee is 65.3 years, nearly a decade less than the life expectancy at birth of someone born in Shelby County generally.[46]

The evidence described above shows that a "generalized condition of air pollution" exists in the South Memphis community. The revelation of the increased toxicity of ethylene oxide and the amount of uncontrolled fugitive emissions escaping from Sterilization Services of Tennessee contribute to that condition, creating "an emergency requiring immediate action to protect human health." Children in the community face a particularly urgent health risk warranting immediate action.

EPA's own modeling indicates that ethylene oxide is present in the atmosphere surrounding Sterilization Services of Tennessee in sufficient quantities to harm people.[47] Specifically, EPA has found that the facility's emissions can cause a cancer risk of up to 2,000 in 1 million people—and that is exclusive of exposure to other cancer-causing chemicals.[48] EPA considers a risk of less than 100 in 1 million people "acceptable."[49] EPA has also identified Sterilization Services of Tennessee as one of the top 23 facilities with the highest risk to the surrounding community.[50] The majority of the risk from Sterilization Services of Tennessee comes from uncontrolled fugitive emissions.[51]

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[43] **Att. 23**, Env't Prot. Agency, *1 mile Ring around the Area, TENNESSEE, EPA Region 4, – SST EtO*, S. ENV'T L. CTR., (last visited Jan. 13, 2023), https://southernenvironment.sharefile.com/d-s8c7ae72125774c6cb4c006532cb0a40b.

[44] **Att. 24**, Env't Prot. Agency, *3 miles Ring around the Area, TENNESSEE, EPA Region 4 – SST EtO,* S. ENV'T L. CTR., (last visited Jan. 13, 2023), https://southernenvironment.sharefile.com/d-sce33d0464eac408092e50f71cef34702.

[45] AL Shaw & Lylla Younes, *The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S.*, PROPUBLICA (Mar. 15, 2022), https://projects.propublica.org/toxmap/.

[46] **Att. 25**, Tejada-Vera B, Bastian B, Arias E, Escobedo LA. & Salant B, *Life Expectancy Estimates by U.S. Census Tract, 2010-2015*, NAT'L CTR. FOR HEALTH STAT. (Mar. 9, 2020), https://www.cdc.gov/nchs/data-visualization/life-expectancy/; **Att. 26**, Sarah Ashley Nicole Collins, *Racial Differences in Life Expectancy Among Shelby County, Tennessee Residents* 7 (2020). Electronic Theses and Dissertations. 2087. https://digitalcommons.memphis.edu/etd/2087.

[47] *Memphis, Tennessee (Sterilization Services of Tennessee)*, *supra* note 31.

[48] *Id.*

[49] **Att. 27**, Darya Minovi, *Invisible Threat, Inequitable Impact Communities Impacted by Cancer-Causing Ethylene Oxide Pollution*, UNION OF CONCERNED SCIENTISTS 7 (Feb. 2023) http://www.ucsusa.org/resources/invisible-threat-inequitable-impact [hereinafter UCS Report]; *Id.*

[50] EPA Slide Presentation, at 11.

[51] *Id.*, at 18.

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Ethylene Oxide Pollution in South Memphis
AIR TOXICS CANCER RISK NEAR STERILIZATION SERVICES OF TENNESSEE
1 Mile Buffer
Sterilization Services of Tennessee
0.5
Mile
Community Features
Places of Worship
K12 Schools
Facilities with Air Permit
Environmental Justice Index
100th %ile
Air Toxics Cancer Risk
0 %ile
No population
Map location
SOUTHERN ENVIRONMENTAL LAW CENTER

A report published recently by the Union of Concerned Scientists, *Invisible Threat, Inequitable Impact, Communities Impacted by Cancer-causing Ethylene Oxide Pollution*, finds that based on the most recent publicly-available data, **ethylene oxide emissions account for approximately 82 percent of the air toxics cancer risk in the census tract that includes Sterilization Services of Tennessee**.[52] The report also finds that Sterilization Services of Tennessee operates within five miles of more than 130,000 people and approximately 180 schools and childcare centers.[53] EPA has stated:

> Because children's bodies are growing, they are expected to be more susceptible to the toxic effects caused by EtO. This is because EtO is mutagenic, meaning it can damage DNA. As children grow, they tend to be more susceptible to the harmful effects caused by chemicals, including chemicals that are mutagenic. For anyone, including children, risks would decrease with decreased exposure.[54]

EPA's EJScreen 2.0 shows that eleven percent of the residents in the one-mile radius immediately surrounding the facility are children under age five—a population that is particularly vulnerable to the damage caused by ethylene oxide.[55] The Health Officer erred by refusing to act immediately to protect children and other vulnerable residents in South Memphis.

There is no credible evidence showing that Sterilization Services of Tennessee is *not* contributing to the air pollution in South Memphis. When EPA announced that Sterilization Services of Tennessee was among the highest risk facilities, the Mayor of Memphis released a report detailing four days of air monitoring the City had commissioned near the facility.[56] That report did not find ambient levels of ethylene oxide above Occupational Health and Safety Administration standards. However, the methodology of that air monitoring exercise was not appropriate for evaluating ambient exposure in the community. An independent review of the City's air monitoring report by atmospheric chemist Dr. Richard Peltier confirms that the air monitoring conducted was flawed in several ways, including: (1) use of a fixed location despite multiple changes in wind direction; (2) measurement interference due to the monitoring instrument's sensitivity to carbon monoxide and proximity to many sources of carbon monoxide;

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[52] UCS Report, at 15.

[53] *Id.*

[54] **Att. 28**, *Our Current Understanding of the Human Health and Environmental Risks of Ethylene Oxide*, U.S. ENV'T PROT. AGENCY, (Dec. 8, 2022), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/our-current-understanding-human-health-and-environmental.

[55] Env't Prot. Agency, *1 mile Ring around the Area, TENNESSEE, EPA Region 4, – SST EtO*, *supra* Note 43.

[56] **Att. 29**, *City of Memphis Response to EPA Ethylene Oxide Announcement*, CITY OF MEMPHIS (Aug. 3, 2022), https://www.memphistn.gov/news/city-of-memphis-response-to-epa-ethylene-oxide-announcement/.

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and (3) the monitoring instrument's inability to detect levels of ethylene oxide likely to be present at ambient levels in the community.[57]

As the updated toxicity information and air modeling performed by EPA shows, Sterilization Services of Tennessee is a "person causing or contributing to the air pollution" and therefore the Health Officer erred by refusing to order them to reduce or stop emitting ethylene oxide.

2. An emergency order is warranted under the "Imminent Danger" scenario.

Even if the Health Officer did not err in declining to find that a generalized condition of pollution exists, the Memphis Code provides:

> [I]f the health officer finds that emissions from the operation of one or more air contaminant sources is causing imminent danger to human health or safety, he or she may order the person responsible for the operation in question to reduce or discontinue operations immediately[.]

Memphis Muni. Code § 9-12-9(B). An emergency order is warranted under this scenario as well.

Sterilization Services of Tennessee is an "air contaminant source" as defined by the Tennessee Air Quality Act. Tenn. Code Ann. § 68-201-102(2) (Air Contaminant Source is "any and all sources of emission of air contaminants, whether privately or publicly owned or operated. Without limiting the generality of the definition of air contaminant source, air contaminant source includes all types of business, commercial and industrial plants. . . ."). The "is causing" language in the ordinance mirrors "is presenting" in Section 303 of the Clean Air Act. *See* 42 U.S.C. § 7603 ("a pollution source or combination of sources (including moving sources) <u>is presenting</u> an imminent and substantial endangerment"). EPA's 1999 guidance states, "The 'is presenting' requirement is clearly met when there are ongoing emissions that endanger public health, welfare, or the environment."[58] As discussed in Section II.A, above, air modeling and toxicity information from EPA satisfy this element.

Sterilization Services of Tennessee's ethylene oxide emissions constitute an "imminent danger," even though the harm to children and other vulnerable residents discussed in Section II and II.A, above, may not manifest for several years. EPA's 1999 guidance states:

> Courts have interpreted the term 'imminent' under other environmental statutes to include situations where present conditions indicate there may be a risk to health or the environment, *even though the harm may not be realized for years*.

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[57] **Att. 30**, Letter from Dr. Richard E. Peltier, Professor Env't Health Sci., U. Mass Amherst, to Amanda Garcia, Dir. Tenn. Off., S. Env't L. Ctr. (Feb. 3, 2023).
[58] 1999 EPA Guidance at 8.

> It is not necessary for the endangerment to be immediate or tantamount to an 'emergency' to be imminent and warrant relief.[59]

Similarly, Tennessee courts have defined *imminent*—as in the phrase "imminent danger"—to require "a reasonable probability . . . as opposed to a mere possibility . . . ."[60]

EPA's updated toxicity analysis and air modeling demonstrates the imminence, or a reasonable probability, of harm. EPA's data also demonstrate the danger of Sterilization Services of Tennessee's ethylene oxide emissions. "[C]ausing . . . danger" in the Memphis code mirrors "endangerment" in Section 303. "EPA interprets 'endangerment' under §303 to mean threatened or potential harm, as well as actual harm."[61] Likewise, "[c]ourts have consistently held that endangerment' means a threatened or potential harm and does not require proof of actual harm.'"[62] Under other environmental statutes, courts have found "endangerment" based on risk of cancer.[63] A federal appellate court emphasized that the danger—not the harm itself—must be imminent to issue an emergency order under the Safe Drinking Water Act's analogous provision.[64]

Because each of the elements of the "Imminent Danger" scenario are satisfied, the Health Officer should order Sterilization Services of Tennessee to discontinue operations immediately.

In summary, the South Memphis community cannot be forced to endure several more years of unnecessary exposure to a cancer-causing chemical while EPA completes its rulemaking. The Shelby County Health Officer has the duty to order Sterilization Services of Tennessee to stop polluting South Memphis's air with ethylene oxide *now*, and he erred in failing to do so.

RELIEF REQUESTED

MCAP respectfully requests that the Air Board issue an order determining that the Health Officer has authority to issue an emergency order addressing Sterilization Services of

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[59] *Id.* at 6. (Emphasis added.)

[60] *State v. Payne*, 7 S.W.3d 25, 28 (Tenn. 1999) ("Therefore, for the threat of death or serious bodily injury to be 'imminent,' the person must be placed in a reasonable probability of danger as opposed to a mere possibility of danger.").

[61] 1999 EPA Guidance at 3.

[62] *Dague v. City of Burlington*, 935 F.2d 1343, 1356 (2d Cir. 1991) (applying "imminent and substantial endangerment" standard in RCRA case).

[63] *See, e.g.*, *Rsrv. Mining Co. v. Env't Prot. Agency*, 514 F.2d 492, 529 (8th Cir. 1975) (finding "endangerment" where "[t]he record shows that [defendant] is discharging a substance into Lake Superior waters which under an acceptable but unproved medical theory may be considered as carcinogenic."), *modified sub nom. Rsrv. Min. Co. v. Lord*, 529 F.2d 181 (8th Cir. 1976).

[64] *Trinity Am. Corp. v. EPA*, 150 F.3d 389, 399 (4th Cir. 1998) ("Because only the 'risk of harm' must be 'imminent,' EPA need not demonstrate that individuals are drinking contaminated water to justify issuing an emergency order. Rather, EPA must demonstrate the 'imminent likelihood' that the public may consume contaminated water unless prompt action is taken to 'prevent' a 'potential hazard from occurring.'") (quoting House Report).

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Tennessee's ethylene oxide pollution and remanding the petition to the Health Officer to consider MCAP's petition on its merits. To the extent that the Department's decision is intended to be a decision on the merits of MCAP's petition, MCAP respectfully requests that the Air Board review that decision, make findings supporting the issuance of an emergency order under section 9-12-9(A) and (B), and issue an order requiring Sterilization Services of Tennessee to immediately cease operations or reduce or discontinue its ethylene oxide pollution.

Respectfully submitted,

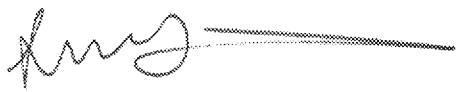

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TABLE OF ATTACHMENTS TO MEMPHIS COMMUNITY AGAINST POLLUTION'S APPEAL OF FEB. 7, 2023 PETITION FOR AN EMERGENCY AIR POLLUTION ORDER

Attachments available at:
https://southernenvironment.sharefile.com/d-s1a61a470b44941ac918be52afa8abed6

Att. 1 Southern Environmental Law Center on behalf of Memphis Community Against Pollution, Petition for an emergency air pollution order under Memphis Code section 9-12-9 requiring Sterilization Services of Tennessee to cease operations to protect the South Memphis community's health (Feb. 7, 2023)
Att. 2 *Statement about Ethylene Oxide*, SHELBY CNTY. HEALTH DEP'T (Feb. 9, 2023)
Att. 3 Memorandum from Eric V. Schaeffer, Dir., Off. Regul. Enf't, Off. Enf't & Compliance Assurance, to Addresses, on Transmittal of "Guidance on Section 303 of the Clean Air Act" (Apr. 1, 1999)
Att. 4 U.S. Environmental Protection Agency Region 4, Clean Air Act Emergency Order, *In the Matter of New-Indy Catawaba LLC d/b/a New-Indy Containerboard* (May 13, 2021)
Att. 5 Tennessee Air Pollution Control Board, *In the Matter of Shelby County, Tennessee, et al., Certificate of Exemption,* Order No. 22-008 (Jun. 8, 2023)
Att. 6 Env't Prot. Agency, *What EPA Is Doing to Address Ethylene Oxide and to Learn More About the Chemical* (Dec. 22, 2022)
Att. 7 Letter from Karen D. Hays, Georgia Environmental Protection Division, to Eric Welch, Sterilization Services of Georgia, re: Request for Permit Modification (Sept. 13, 2019)
Att. 8 Letter from David W. Salyers, P.E., to Concerned Citizen (Jan. 31, 2023)
Att. 9 Env't Prot. Agency, Frequent Questions About Ethylene Oxide (EtO) (Jan. 13, 2023)
Att. 10 Nat'l Ctr. for Env't Assessment, Off. Rsch & Dev., U.S. Env't Prot. Agency, Evaluation of The Inhalation Carcinogenicity of Ethylene Oxide: In Support of Summary Information on the Integrated Risk Information System (Dec. 2016)
Att. 11 Ctrs. For Disease Control & Prevention, *Ethylene Oxide "Gas" Sterilization* (Sept. 18, 2016)
Att. 12 Occupational Safety & Health Admin., *OSHA Fact Sheet: Ethylene Oxide* (2002)
Att. 13 U.S. Dep't Health & Hum. Servs., *ATSDR Clinician Brief: Ethylene Oxide* (2022)
Att. 14 Ill. Dep't Pub. Health, Cancer Incidence Assessment Near Sterigenics in Willowbrok, IL, 1995-2015 (Mar. 29, 2021)
Att. 15 Tex. Dep't State Health Svcs., Assessment of the Occurrence of Cancer Laredo, Texas, 2006-2019 (Oct. 21, 2022)
Att. 16 Env't Prot. Agency, *Ethylene Oxide and Risk in the Community of Memphis Tennessee Slide Presentation* (Oct. 18, 2022)
Att. 17 Dulce Torres Guzman, *EPA tells South Memphis Residents Little Recourse Exists to Deal with Toxic Emissions,* Tennessee Lookout (Oct. 20, 2022)
Att. 18 Chunrong Jia and Jeffrey Foran, Air Toxics Concentrations, Source Identification, and Health Risks: An Air Pollution Hot Spot in Southwest Memphis, TN, 81 Atmospheric Env't 112–116 (Dec. 2013)
Att. 19 Keely Brewer, *A Cancer-causing Chemical Has Been on EPA's Radar for Years. Why Is It Still There?*, Chattanooga Times Free Press (Jan. 29, 2023)

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Att. 20 Env't Prot. Agency, *Memphis, Tennessee (Sterilization Services of Tennessee)* (Oct. 21, 2022)
Att. 21 Off. Gen. Couns., U.S. Env't Prot. Agency, Pub. No. 360R22002, EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum 14 (2023)
Att. 22 *Environmental Justice Index (EJI) Explorer*, Ctrs. for Disease Control & Prevention (2023)
Att. 23 Env't Prot. Agency, *1 mile Ring around the Area, TENNESSEE, EPA Region 4, – SST EtO*, S. Env't L. Ctr.
Att. 24 Env't Prot. Agency, *3 miles Ring around the Area, TENNESSEE, EPA Region 4 – SST EtO,* S. Env't L. Ctr.
Att. 25 Tejada-Vera B, Bastian B, Arias E, Escobedo LA. & Salant B, *Life Expectancy Estimates by U.S. Census Tract, 2010-2015*, Nat'l Ctr. for Health Stat. (Mar. 9, 2020)
Att. 26 Sarah Ashley Nicole Collins, *Racial Differences in Life Expectancy Among Shelby County, Tennessee Residents*, Electronic Theses and Dissertations, 2087 (2020)
Att. 27 Darya Minovi, *Invisible Threat, Inequitable Impact Communities Impacted by Cancer-Causing Ethylene Oxide Pollution*, Union of Concerned Scientists (Feb. 2023)
Att. 28 Env't Prot. Agency, *Our Current Understanding of the Human Health and Environmental Risks of Ethylene Oxide* (Dec. 8, 2022)
Att. 29 City of Memphis, *City of Memphis Response to EPA Ethylene Oxide Announcement* (Aug. 3, 2022)
Att. 30 Letter from Dr. Richard E. Peltier, Professor Env't Health Sci., U. Mass Amherst to Amanda Garcia, Dir. Tenn. Off., S. Env't L. Ctr. (Feb. 3, 2023)

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