TULANE LAW SCHOOL
TULANE ENVIRONMENTAL LAW CLINIC

February 19, 2025

Via Filing on regulations.gov
The Honorable Lee Zeldin
Administrator
U.S. Environmental Protection Agency

Re: Comment on EPA's Interim Framework for Advancing Consideration of Cumulative Impacts; Docket ID No.: EPA-HQ-OLEM-2024-0360

Dear Administrator Zeldin:

On behalf of the Descendants Project, RISE St. James, Inclusive Louisiana, the Louisiana Bucket Brigade, Refined Community Empowerment, and Mossville community members Carolyn Peters, Patricia Charles, Raphael Sias, Ronald Carrier, Larry Allison, Karl Prater, McKeever Edwards, Stafford Frank, and Peggy Anthony (collectively "Louisiana Community Groups"), we submit these comments supporting the urgent need for EPA to incorporate cumulative impacts analyses into every aspect of its work, including, and in particular, its supervisory role over Louisiana's implementation of the mandates of the Clean Air Act (CAA). Being subject to a toxic mixture of chemical exposures from the numerous industrial facilities in their communities, Louisiana Community Groups suffer among the worst cumulative risks of air pollution in the country. EPA must regulate based on—and Louisiana Community Groups deserve to know—the actual health risks of these numerous pollutants that Louisiana Community Groups breathe, rather than an imaginary world in which people breathe only one pollutant at a time.

Louisiana Community Groups recognize that the EPA receiving these comments is under different leadership than the EPA that put out this proposal, and that the environmental justice executive orders referenced in the proposed framework have recently been rescinded. Nevertheless, this EPA is under the same Congressional mandates that the last EPA was under, including:

> [T]o protect public health and welfare from any actual or potential adverse effect which . . . may reasonably be anticipate[d] to occur from air pollution . . . notwithstanding attainment and maintenance of all national ambient air quality standards.

Clean Air Act § 160(1), 42 U.S.C. § 7470(1).

In these comments, Louisiana Community Groups provide legal and factual support for the EPA, and the state of Louisiana, to incorporate cumulative impacts analyses in every aspect of their work, including permitting, monitoring and standard setting. Louisiana Community

Groups note that while they fully support EPA consideration of the full range of stressors on communities like theirs—which include social and economic stressors—as part of a cumulative impacts analysis, these comments focus on the cumulative risk aspect of cumulative impacts analyses (and will use the terms interchangeably). Cumulative risk is easier to quantify and a good place for EPA to start with Title V and PSD permits.

I. To reliably assess and protect against the actual health risks posed by air pollution to individuals in industrialized areas, EPA and LDEQ must analyze exposure to all pollutants.

Currently, there are no protections against cumulative risk from multi-pollutant exposures in Title V or PSD permits. In this context, cumulative risk is defined as "*the combined risk from exposures to multiple chemicals from multiple sources*."[1] Importantly, Louisiana Department of Environmental Quality (LDEQ) permit applications conflate cumulative risk with aggregate risk (*i.e.*, exposure to one chemical from multiple sources).[2] Thus, while LDEQ might claim to consider cumulative risk in permitting decisions, the agency only considers aggregate risk. The legal and health-based standards that are applied to air permitting decisions inaccurately assume that each modeled pollutant exists in isolation. For example, LDEQ could theoretically grant a permit for a facility that would result in modeled concentrations of 10 different respiratory toxins at 0.1% below their respective state ambient air standards. This hypothetical community would face substantially higher risk of respiratory disease than an analogous community where just one of these respiratory toxins is emitted. Given that most pollutants impact the lungs and many are carcinogenic, cumulative risk is especially relevant to respiratory hazard and cancer risk.

Further, there is no EPA or LDEQ information source that accounts for cumulative risk due to multi-pollutant exposures from existing *and proposed* industrial operations (*i.e.*, facilities that have not yet begun operating but have been granted a permit, or have a permit application pending). Thus, neither the regulatory agencies nor the public can reliably evaluate real-world impacts from proposed permitting actions.

Permitting decisions are an obvious mechanism through which EPA can begin to address cumulative risk from multi-pollutant exposures. Importantly, EPA has already developed a framework for evaluating cumulative risk that can be easily integrated into the permit application and review process. Specifically, EPA calculates overall cancer risk and respiratory hazard values associated with *reported* emissions from *existing* sources through AirToxScreen (formerly NATA) and the Risk-Screening Environmental Indicators programs. These same methods could be used to calculate overall risk associated with *permitted* emissions from *existing and proposed* sources in Title V and/or PSD permit applications. These overall risk values would allow the regulatory agencies and the public to assess the potential impacts of real-world air quality in the context of proposed emissions increases.

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[1] Texas Commission on Environmental Quality, Cumulative Risk from Airborne Chemicals, accessed Feb 18, 2025, https://www.tceq.texas.gov/toxicology/q-a/cumulative_risk.

[2] *See*, e.g., Nucor Steel Louisiana LLC, statement about "cumulative impacts" in its 2019 air permit application, LDEQ EDMS Doc #12175457, p. 12.

Below are four examples of industrial facilities in Louisiana that result in unacceptably high cumulative risks of cancer and/or respiratory disease, based on our analysis of permitting documents. We used EPA inhalation unit risk values and reference concentrations (RfCs) from the RSEI Chemical Dictionary (Version 2.3.12), and we identified chemicals for which RfCs are based on respiratory impacts using the information in EPA's 2020 AirToxScreen Pollutants Database. We calculated Respiratory Hazard values following EPA's AirToxScreen methodology, using modeled ambient concentrations reported in the most recent permit applications for these facilities. We used a time scaling factor of 0.11 to convert modeled 8-hr concentrations to annual concentrations, consistent with EPA guidance (see Aerscreen User's Guide, April 2021).

A. Cumulative health risks near Formosa Plastics' proposed Chemical Complex in Welcome, Louisiana, are unacceptably high and likely underestimated.

Formosa Plastics, a Taiwan-based company, has 14 Title V permits to operate a proposed Chemical Complex in the small town of Welcome, Louisiana. Although the facility's Prevention of Significant Deterioration (PSD) permit aims to limit the overall negative impacts of the resulting emissions, LDEQ considered each of the permitted 28 pollutants in isolation. None of these permits consider the cumulative risks from pollutant *mixtures*. Collectively, the permitted pollutants impact nearly every body system, particularly the lungs.

Respiratory Disease

The LDEQ has evidence that residents near Formosa's site are exposed to three criteria pollutants ($PM_{2.5}$, NO_2, and ozone) at concentrations near or *above* the corresponding National Ambient Air Quality Standards (NAAQS). Importantly, all three pollutants impact the lungs, and the corresponding standards were designed to protect the public from respiratory disease.

Formosa's most recent publicly-available air dispersion modeling indicates that ambient concentrations of $PM_{2.5}$ and NO_2 would exceed the NAAQS by an **undisclosed** amount.[3] The company's failure to disclose modeled concentrations of these two pollutants contradicts the CAA requirement that no major emitting facility may be constructed unless "the owner or operator of such facility demonstrates . . . that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any . . . national ambient air quality standard."[4] While LDEQ may be satisfied with this "*trust me, it's fine*" approach, the CAA requirement that the facility "demonstrate" NAAQS compliance does not allow LDEQ to shirk its responsibility in this manner.[5] Additionally, the public has a right to know the quantitative results of Formosa's legally-mandated air dispersion modeling. Regardless of the permit decision, the public has an obvious interest in knowing the magnitude of predicted NAAQS violations.

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[3] Formosa Title V Permit Renewal, LDEQ EDMS Doc. No. 14359278 (July 3, 2024), https://edms.deq.louisiana.gov/app/doc/view?doc=14359278.
[4] 42 U.S.C. § 7475(a)(3)(B).
[5] *Id.*

Although there is a lack of long-term air *monitoring* data for $PM_{2.5}$ and NO_2 in this geographic area, LDEQ has access to ozone data from its Convent monitor, located seven miles from Formosa's proposed site. The current ozone design value (DV) for this site is within 5% of the NAAQS (2022-2024 DV = 67ppb, versus 70ppb, respectively).[6] Thus, LDEQ has evidence that three individual criteria pollutants ($PM_{2.5}$, NO_2, and ozone) may each present an unacceptable risk of respiratory disease to people living around Formosa's proposed site. Although LDEQ gave no consideration to the *cumulative* risk of respiratory disease from the real-world *mixture* of $PM_{2.5}$, NO_2, and ozone, the best available, credible evidence indicates that this risk is unacceptably high.

In addition to risks from criteria pollutants, residents in this geographic area site face significant respiratory risk from air toxics. For example, Formosa reported a modeled acetaldehyde concentration of 4.55 $\mu g/m^3$, which is half of the corresponding reference concentration (9.0 $\mu g/m^3$). Formosa is permitted to emit several other toxics that are well known to cause respiratory disease, including ammonia, ethylene glycol, formaldehyde, hydrogen sulfide, naphthalene, propionaldehyde, sulfuric acid, and vinyl acetate. While LDEQ relies on Louisiana Ambient Air Standards (LAAS) to address health risks from air toxics, these standards, like the NAAQS, consider each pollutant in isolation. And, unlike the NAAQS, the LAAS have not been updated since they were first established over 30 years ago and do not reflect current science. For example, the LAAS for acetaldehyde is five times higher than EPA's Reference Concentration (45.5 $\mu g/m^3$ versus 9 $\mu g/m^3$, respectively). Applying a cumulative risk analysis based on current science to LDEQ permitting decisions would allow EPA to uphold the language and intent of the Clean Air Act, which is not being met by Louisiana's outdated air toxics standards.

Cancer Risk

LDEQ required Formosa to model concentrations of five known human carcinogens: 1,3-butadiene, acetaldehyde, benzene, formaldehyde, and ethylene oxide. Yet, LDEQ did not take any action to address the resulting evidence of unacceptably high cancer risk. Most of this risk was driven by the modeled ethylene oxide concentration, which, by itself equated to a **1-in-833 cancer risk**.[7] Even if the toxicity of ethylene oxide were overestimated by 10-fold, the corrected cancer risk would still exceed Louisiana's 's 1-in-10,000 acceptable risk threshold.[8] Furthermore, the combined cancer risk from the other four known human carcinogens (*i.e.*, excluding ethylene oxide) is approximately 1-in-20,000, which exceeds EPA's more protective residual risk threshold of 1-in-100,000 (equivalent to 10-in-1 million).[9] Importantly, none of

[6] EPA Annual Air Monitoring Summary Data by Monitor, St. James Parish, Louisiana (22093) Site 0002, Years 2022-2024, available at https://aqs.epa.gov/aqsweb/airdata/download_files.html.
[7] Modeled annual average ethylene oxide concentration: 0.4 $\mu g/m^3$, EPA IUR: 0.003. Resulting cancer risk = 0.0012, or 1-in-833.
[8] LAC 33:III, Chapter 51, Subchapter A, §5112 (see ** footnote in Table 51.2).
[9] Modeled annual average concentrations of 1,3-butadiene, acetaldehyde, benzene, formaldehyde, respectively: 2.5 $\mu g/m^3$; 0.02 $\mu g/m^3$; 0.687 $\mu g/m^3$; and 4.55 $\mu g/m^3$. Respective IURs: 7.8×10^{-6}; 1.3×10^{-5} 3.0×10^{-5}; and 2.2×10^{-6}. *See also* EPA risk thresholds in 2020 AirToxScreen Technical Support

these values account for cancer risk from Formosa's (or other sources') emissions of naphthalene, which LDEQ did not require Formosa to model. Taken together, these considerations indicate that the cumulative cancer risk from industrial emissions around Formosa's proposed chemical complex is far higher than LDEQ's or EPA's acceptable risk thresholds.

Risk Underestimation

Air *monitoring* data suggest that Formosa's air dispersion model significantly underestimated concentrations of certain pollutants that are known to cause cancer or respiratory disease, thereby underestimating the corresponding health risks. For example, Formosa's most recent air dispersion modeling[10] predicted a maximum ozone design value of 62 ppb, which is significantly lower than recent (2022-2024) annual design values from the two nearest LDEQ ozone monitors (65-68 ppb in Convent and 65-70 ppb in Dutchtown).[11] Yet LDEQ was either unaware of, or chose to ignore, this discrepancy. Additionally, an independent, peer-reviewed study published in June 2024 found that measured concentrations of ethylene oxide near Formosa's proposed site were consistently higher than EPA estimates, which are based on self-reported emissions data.[12] These discrepancies emphasize the importance of incorporating robust air *monitoring* systems into Title V and PSD permit requirements to help quantify cumulative risks.

B. Cumulative health risks near IMTT's petrochemical terminal in St. Rose, Louisiana are extremely high, with no demonstration of NAAQS compliance.

International Matex Tank Terminals (IMTT) operates a large petrochemical terminal with over 200 storage tanks in the residential community of St. Rose, Louisiana. Some of these tanks were constructed less than 300 feet from people's homes. While IMTT is a major source of SO_2, NO_2, CO, and VOCs, LDEQ has **never** required IMTT to demonstrate compliance with any NAAQS, except the annual NO_2 standard (which does not ensure compliance with the 1-hr NO_2 standard, as EPA has recognized).[13] Although IMTT is permitted to emit 40 air toxics, LDEQ has only required the company to model ambient concentrations of 11 air toxics. Importantly, IMTT has not submitted *any* air dispersion modeling to LDEQ since 2010, despite ongoing industrial development and significant increases in permitted emissions in the area. Yet even

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Document, p. 117, available at https://www.epa.gov/system/files/documents/2024-05/airtoxscreen_2020-tsd.pdf.

[10] Submitted to LDEQ on Feb. 9, 2024, *see* EDMS Doc # 14359278, p. 11.

[11] EPA Annual Air Monitoring Summary Data by Monitor, St. James Parish, Louisiana (22093) Site 0002, and Ascension Parish, Louisiana (22005) Site 0004; Years 2022-2024, available at https://aqs.epa.gov/aqsweb/airdata/download_files.html.

[12] Robinson, et al., 2024, Ethylene Oxide in Southeastern Louisiana's Petrochemical Corridor: High Spatial Resolution Mobile Monitoring during HAP-MAP, *Environmental Science & Technology*, https://pubs.acs.org/doi/10.1021/acs.est.3c10579

[13] EPA Review of NO_2 NAAQS, Section D, https://www.federalregister.gov/documents/2018/04/18/2018-07741/review-of-the-primary-national-ambient-air-quality-standards-for-oxides-of-nitrogen.

IMTT's incomplete and outdated air modeling reveals unacceptably high cumulative health risks to the nearby community.

Respiratory Disease

IMTT is permitted to emit at least 13 air toxics for which EPA provides reference concentrations based on respiratory impacts.[14] Although LDEQ only required IMTT to model two of these toxics (hydrogen sulfide and naphthalene), the predicted concentrations far exceed EPA's reference concentrations (even after applying a scaling factor to convert 8-hr averages to annual averages).[15] Not only did LDEQ fail to acknowledge the unacceptably high risk from each of these air toxics, the agency gave no consideration whatsoever to cumulative respiratory risk from exposure to pollutant mixtures near IMTT St. Rose. Considering just these two pollutants in combination results in a respiratory hazard of 40. Even if real-world hydrogen sulfide and naphthalene exposures were only 1% of IMTT's estimated 8-hr concentrations, the resulting respiratory hazard would be 3.7, far above EPA's risk threshold of 1.0. Further, this risk does not account for IMTT's significant emissions of formaldehyde (>5 tpy permitted), a potent respiratory toxin.

Although the respiratory risk from IMTT's emissions of criteria pollutants has not been characterized, data from LDEQ's two nearest monitors reveal that ozone concentrations are within 5-7% of the NAAQS.[16] Thus, LDEQ should consider that ground-level ozone adds to the risk of respiratory disease borne by St. Rose residents. Notably, IMTT emits exceptionally large amounts of ozone precursors, with permitted NOx emissions of ~650 tpy and permitted VOC emissions over 1,400 tpy.

Cancer Risk

In its 2010 air dispersion modeling, IMTT predicted concentrations of five carcinogens: benzene, 1,3-butadiene, ethylbenzene, naphthalene, and polycyclic aromatic hydrocarbons (PAHs). Based on the predicted concentrations, the cumulative cancer risk from these five pollutants is **1-in-310** (Table 1, below). Even if real-world exposures were just 2% of the scaled concentrations in Table 1, the resulting cancer risk would exceed the 1-in-10,000 threshold. Yet, LDEQ did not consider this substantial cumulative cancer risk when evaluating IMTT's proposed permit. Instead, the agency relied on Louisiana's outdated (and generally inadequate)

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[14] 1,2-dibromoethane, 1,3-dichloropropene, acetaldehyde, acrolein, ammonia, dichloromethane, diethanolamine, formaldehyde, methyl bromide, naphthalene, hydrochloric acid, hydrogen sulfide, naphthalene, propionaldehyde, sulfuric acid, and vinyl acetate.

[15] Modeled 8-hr average concentrations of hydrogen sulfide and naphthalene were 185 $\mu g/m^3$ and 833 $\mu g/m^3$, respectively. Applying EPA's scaling factor (11% or 0.11) results in estimated annual average concentrations of 20 and 92 $\mu g/m^3$, respectively. Corresponding RfCs are 2.0 $\mu g/m^3$ and 3.0 $\mu g/m^3$, respectively.

[16] Ozone design values (2022-2024) at Kenner monitoring site (7 mi NE of IMTT) and St. John monitoring site (19 miles NW of IMTT) were 65.0 and 66.7ppb, respectively; *see* EPA Annual Air Monitoring Summary Data by Monitor, Jefferson Parish, Louisiana (22051) Site 1001, and St. John the Baptist Parish, Louisiana (22095) Site 0002; Years 2022-2024, available at https://aqs.epa.gov/aqsweb/airdata/download_files.html.

ambient air standards to evaluate risks from individual pollutants in isolation. The standards for two of these carcinogens, ethylbenzene and naphthalene, are especially problematic because they are based on 8-hr averages, which are not appropriate for limiting carcinogenic risk in a residential setting. Chronic exposure to naphthalene at a concentration just below the 8-hr standard (1,190 $\mu g/m^3$) results in a 1-in-25 cancer risk. Similarly, chronic exposure to ethylbenzene at a concentration just below the 8-hr standard (10,300 $\mu g/m^3$) results in a 1-in-39 cancer risk. While LDEQ may claim that standards based on 8-hr (versus annual) averages cannot be used to assess risk from chronic exposures, *LDEQ bases its permit review on the LAAS, and these are the only standards that LDEQ considers for naphthalene and ethylbenzene*. Further, EPA provides scaling factors to enable conversion between 8-hr and annual averages. Thus, LDEQ's analysis of IMTT's modeling ignored not only cumulative cancer risk, but also the cancer risk from chronic exposure to two individual pollutants (naphthalene and ethylbenzene). Again, a strong cumulative risk analysis in the permitting process could account for the deficiencies in Louisiana's outdated ambient air standards.

Table 1. Cumulative Cancer Risk Based on IMTT's Air Dispersion Modeling

Pollutant	**Modeled Concentration ($\mu g/m^3$)**	**Scaled Concentration ($\mu g/m^3$)***	**EPA IUR (risk per $\mu g/m^3$)**	**Cancer Risk**
Benzene	6.24	6.24	7.8×10^{-6}	4.87×10^{-5}
1,3-Butadiene	0.26	0.26	3.0×10^{-5}	7.80×10^{-6}
Ethylbenzene	190.7	20.98	2.5×10^{-6}	5.24×10^{-5}
Naphthalene	832.71	91.60	3.4×10^{-5}	3.11×10^{-3}
PAHs	0.049	0.049	6.0×10^{-4}	2.94×10^{-5}
Cumulative Cancer Risk				**0.00322 (1-in-310)**

*EPA scaling factor (0.11) applied to calculate annual averages for pollutants modeled as 8-hr averages.

C. The weight of evidence indicates an unacceptably high cumulative risk of respiratory disease from Nucor's facility in Romeville, Louisiana.

Nucor Steel Louisiana LLC ("Nucor") operates a manufacturing facility in Romeville (St. James Parish) that is permitted to emit 32 pollutants, including at least seven toxics that primarily impact the respiratory system: acetaldehyde, acrolein, ammonia, formaldehyde, hydrogen sulfide, naphthalene, and sulfuric acid.[17] Nucor has consistently violated its annual emission limits for sulfur dioxide, hydrogen sulfide, and sulfuric acid – all pollutants that cause respiratory disease.[18] Despite the cause for increased scrutiny, LDEQ has never considered the cumulative respiratory risks borne by residents from pollutant mixtures near Nucor's facility.

Respiratory Disease

[17] Nucor Steel air permit 3086-V10AA, EDMS Doc # 14298055.
[18] Sept. 16, 2021 email from Lane Grant (Nucor) to Madison Kirkland (LDEQ), EDMS Doc #12895227, pp. 1-4.

Like Formosa Plastics, Nucor provided evidence of $PM_{2.5}$ and NO_2 NAAQS violations through air dispersion modeling submitted to LDEQ.[19] The modeling, submitted in April 2019, predicted a 24-hour $PM_{2.5}$ concentration that was almost double the standard (59 $\mu g/m^3$ versus 35 $\mu g/m^3$), as well as an annual average that was ~30% above the current standard (11.87 $\mu g/m^3$ versus 9.0 $\mu g/m^3$). The modeled 1-hr NO_2 concentration was more than 6 times the standard (1,263.7 $\mu g/m^3$ versus 188.6 $\mu g/m^3$, respectively). Notably, LDEQ subsequently allowed Nucor to avoid updated $PM_{2.5}$ and NOx modeling (thus obscuring further evidence of NAAQS violations) by adopting an arbitrary, new calculation methodology (*i.e.*, "Projected Actual Emissions") in lieu of the mandated "Potential to Emit."[20] Both $PM_{2.5}$ and NO_2 standards are designed to protect the public from respiratory disease. Furthermore, as described above, the ozone design value from the nearest LDEQ monitor is within 5% of the NAAQS, posing additional respiratory risk.

Emissions of air toxics from Nucor and other facilities further increase the respiratory burden on nearby residents. For example, the modeled concentration of hydrogen sulfide from Nucor's emissions (1.44 $\mu g/m^3$, scaled from the 8-hr modeled concentration of 13.11 $\mu g/m^3$) alone results in a respiratory hazard of 0.72.[21] This value does not reflect the other respiratory toxins emitted by Nucor (some of which have never been modeled) or nearby facilities (*e.g.*, Mosaic Uncle Sam and Occidental Chemical). Thus, even in the absence of robust air modeling, the weight of evidence indicates unacceptable cumulative risks of respiratory disease for residents living near Nucor.

D. Modeling reveals unacceptably high cancer risk near Indorama's Lake Charles facility, with no accounting for subsequent increases in carcinogenic emissions.

Indorama operates a plastics manufacturing facility in the Lake Charles metropolitan area, just south of the historic Black community of Mossville, which has been almost completely dismantled by industrial development. The facility is permitted to emit 30 different pollutants, including several carcinogens: arsenic, 1,3-butadiene, benzene, ethylbenzene, formaldehyde, and naphthalene. Indorama has conducted air dispersion modeling for three of these carcinogenic pollutants: 1,3-butadiene, benzene, and formaldehyde.

Analysis of Indorama's most recent air dispersion modeling, submitted to LDEQ in 2020, reveals an alarmingly high cumulative cancer risk. Based on Indorama's modeled concentrations, the combined cancer risk from the three modeled carcinogens is 1-in-2,128, far above LDEQ's 1-in-10,000 threshold. Most of this risk is driven by 1,3-butadiene, but a substantial portion is also attributable to benzene. Additionally, the maximum modeled concentration of 1,3-butadiene is more than 13 times higher than the Louisiana ambient air standard (LAAS).

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[19] *See* Nucor 2020 permit application, PDF p. 7, EDMS Doc #12252342.
[20] *See* Nucor 2022 proposed permit, PDF p. 8, EDMS Doc #13468402.
[21] Based on EPA's reference concentration of 2.0 $\mu g/m^3$ and Nucor's 2021 air dispersion modeling report, PDF p. 23 of EDMS Doc # 12871834.

While Indorama claims that "all exceedances of the [1,3-butadiene] AAS occur on industrial property,[22] this air dispersion modeling was conducted in support of a permit application that allowed Indorama to emit only 3.75 tpy of 1,3-butadiene.[23] The facility's current permit allows Indorama to emit a vastly larger quantity of 1,3-butadiene (11.14 tpy) and includes an additional emissions source that is closer to residential areas.[24] Similarly, the modeled concentration of benzene, which was just below the LAAS, was based on Indorama's permitted 8.84 tpy of benzene emissions, as opposed to the current limit of 17.84 tpy.[25]

Data from the nearest LDEQ air monitor confirm that residents in this area are exposed to dangerously high concentrations of 1,3-butadiene that exceed both the LAAS and EPA cancer risk thresholds.[26] Specifically, LDEQ's Westlake air monitor indicates an average 1,3-butadiene concentration of 1.10 $\mu g/m^3$ for 2021-2023 (versus the LAAS of 0.92 $\mu g/m^3$), based on regularly collected, 24-hr samples. When including shorter-term samples that are "triggered" by a VOC plume, the average increases to 8.22 $\mu g/m^3$. This overall, *measured* concentration of 1,3-butadiene corresponds to a 1-in-4,055 cancer risk.

Importantly, the above risk values do not account for other carcinogenic emissions in the area, particularly ethylene oxide. The most recent air dispersion modeling conducted by Sasol, a nearby chemical complex, in 2013 revealed that the facility's ethylene oxide emissions alone constitute an unacceptable cancer risk. Specifically, the modeled ethylene oxide concentration of 0.95 $\mu g/m^3$ corresponds to a 1-in-350 cancer risk.[27] Even excluding Sasol's ethylene oxide emissions, the 8 other carcinogens emitted by this facility (that have been modeled) pose an unacceptably high cancer risk of 1-in-1,107. For communities like Mossville that are sandwiched between Indorama and Sasol (and numerous other industrial facilities), the evidence of unacceptable cancer risk is overwhelming.

II. To comply with the broad Congressional mandates of Titles I and V of the Clean Air Act, EPA must include cumulative impacts as a key component of its Title V and PSD permitting responsibilities.

A. EPA has authority under 42 U.S.C. § 7661d to review permits as necessary to ensure compliance with EPA's other responsibilities.

Title V of the Clean Air Act provides EPA authority to implement cumulative impacts analysis (CIA). Though Title V does not impose new air quality controls on facilities already

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[22] LDEQ Basis for Decision, Indorama Ventures Olefins Permits 0520-00107-V5 and PSD-LA-813(M3), PDF p. 13, EDMS Doc #13275727.
[23] LDEQ Basis for Decision, Indorama Ventures Olefins Permits 0520-00107-V5 and PSD-LA-813(M3), PDF p. 6, EDMS Doc #13275727.
[24] Indorama Ventures Olefins air permit 0520-00107-V8, PDF p. 4, EDMS Doc #14637813.
[25] Indorama Ventures Olefins permit application, PDF p. 97, EDMS Doc #14268834.
[26] LDEQ air monitoring data available at https://internet.deq.louisiana.gov/portal/DIVISIONS/AIR-MONITORING/CANISTER-DATA.
[27] *See* Sasol's December 2024 permit #2743-V10 application, PDF pp. 35-36, for a summary of the 2013 air dispersion modeling results, available at https://edms.deq.louisiana.gov/app/doc/view?doc=14599184.

regulated under the Clean Air Act, it does mandate monitoring, recordkeeping, reporting, and other conditions to assure emissions sources comply with all applicable requirements of their permit terms, and allows for EPA objection to (and State denial of) any proposed air permit that does not comply with the requirements of the CAA. Under this program, EPA has broad authority to calculate and consider the cumulative impacts and cumulative risk of co-pollutants when reviewing Title V permits proposed by LDEQ. "EPA may consider cumulative impacts to help prioritize and decide which among thousands of Title V operating permits the Agency will scrutinize to ensure that they are consistent with the requirements of the CAA."[28] Indeed, applying cumulative impacts analysis to Title V permitting would further EPA's need to "[u]se available data and information to make decisions and take action."[29]

Further, the language of the CAA Title V program affirms EPA's responsibility to ensure Title V permitting harmonizes with the agency's other duties mandated in the Clean Air Act. Other subchapters in the CAA provide textual support for EPA's authority to perform CIAs and the necessity of doing so to ensure human health and welfare. The Title V implementing regulations also support EPA's ability to conduct CIAs and further support the necessity of cumulative impacts analyses.

Pursuant its authority under 42 U.S.C. § 7661d, which governs the process for EPA review of state air permits, EPA has the ability to apply cumulative risk analysis in the context of Title V permitting.[30] In its *EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum*, EPA reiterates the benefit of cumulative risk analysis in Title V permitting, stating that it "may consider cumulative impacts to help prioritize . . . which among the thousands of Title V operating permits the Agency will scrutinize . . . ."[31] Indeed, EPA can begin prioritizing permits at the application stage. Section 505 of the CAA reaffirms that EPA's broad authority begins at this stage. There, the CAA requires the state permitting authority to transmit "each permit application (and any application for a permit modification or renewal) . . . as the Administrator may require to effectively review the application and otherwise to carry out the Administrator's responsibilities under this chapter."[32] EPA's broad directive to harmonize Title V and the CAA generally provides further support for the use of CIA.[33]

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[28] EPA, *EPA Legal Tools to Advance Environmental Justice: Cumulative Impacts Addendum* (Jan. 2023), Publication No. 360R22002 ("Addendum").
[29] EPA, *Interim Framework for Advancing Consideration of Cumulative Impacts* at 12, EPA-HQ-OLEM-2024-0360 (Nov. 2024).
[30] 42 U.S.C. § 7661d(e) ("If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit under this subchapter, the Administrator . . . may, after notice and in accordance with fair and reasonable procedures, terminate, modify, or revoke and reissue the permit."); *see also* 40 C.F.R. § 70.7(f).
[31] *Addendum* at 11.
[32] 42 U.S.C. § 7661d(a)(1)(A).
[33] *See, e.g.*, 42 U.S.C. § 7401(b) (stating that the purposes of the proceeding subchapter are "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population" and "to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution."); 42 U.S.C. § 7601 (affirming that "[t]he Administrator is authorized to prescribe such regulations as are necessary to carry

1. EPA can use cumulative impacts analyses to determine which permits to prioritize for review and objection under 7661d(b)(1).

As an act of cooperative federalism, states reviewing Title V permits must provide the permit application to EPA for review. This includes applications for minor permit modifications.[34] As stated in 40 C.F.R. § 70.8(a), before a Title V permit can be finalized, EPA must review the permit and be allowed to object as necessary.[35] During its 45-day review period, EPA must object to issuance of the permit if it determines that the permit does not satisfy the applicable requirements of the CAA or the requirements of 40 C.F.R. § 70.[36] That regulation, 40 C.F.R. § 70.1(a), notes that existing regulations provide the "minimum elements required by the Act" for operating permits. Pursuant its broad grant of authority under the Act, EPA may establish more stringent requirements that do not otherwise conflict with the CAA.[37] Title V permits are required for a broad range of sources, including major sources, area sources, "affected sources," and any source in a source category determined by the Administrator.[38]

EPA can object to a permit under 40 C.F.R. § 70.8(c)(1) if the permit is found to violate an applicable requirement or requirements under Title V generally.[39] Louisiana Community Groups recognize that "thousands of Title V operating permits" come across EPA air permitting personnel's desks.[40] For this reason, CIAs provide EPA the necessary basis to identify which permits require independent EPA review. Where a facility sits in an area that flags for numerous co-pollutants, like Louisiana Community Groups' neighborhoods, EPA should choose to scrutinize such permits to more closely ensure their permit terms are adequate to meet all applicable requirements.[41]

2. EPA can use cumulative impacts analyses to object to permits pursuant to a public petition under 7661d(b)(2).

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out his functions under this chapter."); 42 U.S.C. § 7611 (granting EPA the authority to access records and audits that are pertinent to grants received under the CAA); 42 U.S.C. § 7619(a)(1), (b)(3)(A)(i) (providing EPA statutory authority to impose notice-and-comment rulemakings that "utilize uniform air quality monitoring criteria" in furtherance of its highest priority—"protection of public health.").

[34] 40 C.F.R. § 70.8(a)(1).

[35] 42 U.S.C. § 7661d(a)(1); 40 C.F.R. § 70.8(a).

[36] 42 U.S.C. § 7661d(b)(1); 40 C.F.R. § 70.8(c).

[37] 42 U.S.C. § 7601(a)(1) ("The Administrator is authorized to prescribe such regulations as are necessary to carry out his functions under this chapter.").

[38] 40 C.F.R. § 70.3.

[39] *See, e.g.*, 40 C.F.R § 70.6 (establishing the minimum required Title V permit content, including provisions allowing for revision or revocation of a permit for cause).

[40] Addendum, supra note 28 at 11.

[41] Additional grounds may be found under 40 C.F.R. § 70.6, which addresses the minimum monitoring, recordkeeping, and reporting requirements in facility permits. Under a facility's reporting duties, a facility must promptly report any deviations from its permit requirements. This reporting requirement may be employed as a triggering condition for cumulative impacts analysis proposed in EPA's interim framework.

If after EPA's 45-day permit review period expires and the agency does not object to issuance of the permit, "any person" may petition EPA to object to the permit within 60 days after the end of EPA's 45-day permit review period.[42] 40 C.F.R. §§ 70.12-14 lays out the requirements for public petitions to EPA for objection. The EPA must object to issuance of a permit "if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of this chapter, including the requirements of the applicable implementation plan."[43] Public petitions to EPA typically challenge the adequacy of monitoring, reporting, and recordkeeping procedures. Cumulative risk analyses can inform EPA decisions on the adequacy of monitoring, reporting, and recordkeeping requirements.

Determining the sufficiency of monitoring within a Title V permit is necessarily a "case-specific inquiry."[44] As a practical matter, EPA must have a functional framework to selectively review the adequacy of monitoring within a permit. Historically, when a Title V permit is pending in an environmental justice community, "[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions is warranted" because of the potential adverse impacts on those communities.[45] Thus, EPA has a long-standing practice of applying focused attention to monitoring in communities that flag for certain cumulative impacts indices. Therefore, the public petition process provides an avenue for EPA to continue judicially applying "focused attention" when high co-pollutant values are found in areas with high proportions of low-income and minority residents.

And requiring additional monitoring—like fenceline monitoring—to ensure a facility complies with permit limitations is essential for areas where Louisiana Community Groups live. When faced with myriad ***permitted*** sources of pollution, it becomes that much more important to ensure that permit limits are not exceeded. Fenceline monitoring is often the only way to discern the levels of pollutants that a facility actually emits.

3. EPA can use cumulative impacts analyses to reopen or revise permits.

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[42] 42 U.S.C. § 7661d(b)(2).
[43] 42 U.S.C. § 7661d(b)(2).
[44] *In the Matter of ExxonMobil Fuels & Lubricant Co.*, Order on Petition Nos. VI-2020-4, VI-2020-6, VI-2021-1, and VI-2021-2 at 10 (Mar. 18, 2022), https://www.epa.gov/system/files/documents/2022-04/exxonmobil-baton-rouge-order_3-18-22.pdf (Order granting Title V Petition based, in part, on EPA application of "focused attention" because of environmental justice community's proximity to facility).
[45] *In the Matter of United States Corp. – Granite City Works*, Order on Petition No. V-2011-2 at 6 (Dec. 3, 2012), https://www.epa.gov/sites/default/files/2015-08/documents/uss_2nd_response2009.pdf (Order granting Title V Petition and affirming EPA's duty to apply focused attention to monitoring and compliance when facility is cited near environmental justice community); *see also In the Matter of ExxonMobil Fuels & Lubricant Co.*, supra n. 44 (acknowledging that because "the area surrounding the [permitted facility] is home to a high proportion of low-income residents and people of color and a concentration of industrial activity," EPA gives "focused attention to the adequacy of monitoring" raised as a concern by community members).

Under 40 C.F.R. § 70.7(g), EPA has express authority to terminate, modify, or revoke and reissue a Title V permit "for cause."[46] Section 70.7(f) provides the conditions under which a permit may be reopened and revised: (i) the addition of new applicable requirements that impact the permitted facility, (ii) the addition of new requirements under the acid rain program, (iii) a determination of material mistake or inaccurate statement made in setting terms or conditions of the permit, or (iv) a determination that the permit must be revoked or revised to assure compliance with existing applicable requirements.[47]

By applying cumulative impacts analyses here, EPA may use cumulative impacts indices as a screening mechanism to isolate permits that should be reopened. Pursuant to its statutory and regulatory authority, EPA may modify or revoke any Title V permit for cause; however, as a practical matter, EPA cannot continually monitor every Title V permit that has been issued. Cumulative impacts analysis, therefore, provides a framework through which EPA can selectively target facilities that emit high levels of co-pollutants and closely analyze those facilities permit terms to ensure ongoing compliance with its Title V operating permit.

B. EPA has authority to consider cumulative impacts throughout the PSD permitting process.

1. EPA has authority under 42 U.S.C. § 7470 to conduct a cumulative risk analysis to ensure compliance with the purpose of PSD permitting.

The provisions that put forth the overarching purpose of PSD permitting affirm the importance of analyzing impacts and risks cumulatively during the PSD permitting process. The PSD process applies to areas that are classified as in attainment with or nonclassifiable for a NAAQS. Currently all of the areas in which Louisiana Community Groups reside fall into this category.[48]

As is stated in the CAA, the first purpose of PSD permitting is "to protect public health and welfare from *any actual or potential adverse effect* which in the Administrator's judgment *may reasonably be anticipate [sic] to occur from air pollution* or from exposures to pollutants in other media, which pollutants originate as emissions to the ambient air) [sic], notwithstanding attainment and maintenance of all national ambient air quality standards."[49] This purpose aligns with the fundamental spirit of a cumulative impacts analysis; namely, that consideration of both actual and potential adverse effects is necessary when administering permits for facilities that will emit harmful chemicals.

Another stated purpose of PSD permitting is "to assure that *any decision to permit increased air pollution* in any area to which this section applies *is made only after careful*

[46] 40 C.F.R. § 70.7(g).
[47] 40 C.F.R § 70.7(f).
[48] Louisiana Community Groups dispute that their areas are actually in attainment for all of the NAAQS pollutants, and dispute that unclassifiable areas should be classified as attainment.
[49] 42 U.S.C. § 7470(1) (emphasis added). Note that the grammatical errors were present in the original and are included here for the sake of preserving the original language.

evaluation of all the consequences of such a decision and after adequate procedural *opportunities for informed public participation* in the decisionmaking process."[50] The broad phrasing leaves room for consideration of, for example, social and economic impacts that go beyond adverse health effects. Explicitly requiring evaluation of "all the consequences" confirms the importance of evaluating not only those consequences which pertain to acute health impacts.

This broad phrasing also provides context within which the preconstruction permit requirements of the Act must be interpreted. The Act provides that "no major emitting facility . . . may be constructed in any area to which this part applies unless—(6) there has been an analysis of any air quality impacts projected for the area as a result of growth associated with such facility; [and] (7) the person who owns or operates, or proposes to own or operate, a major emitting facility for which a permit is required under this part agrees to conduct such monitoring as may be necessary to determine the effect which emissions from any such facility may have, or is having, on air quality in any area which may be affected by emissions from such source."[51] Thus facilities proposed for locations with multiple distinct sources of multiple pollutants, like Louisiana Community Groups' communities, should not receive a permit until they conduct an analysis of the cumulative risk of this chemical mixture. This analysis must include not only the proposed facility itself and existing facilities, but facilities that can be expected to locate because of the proposed facility, such as facilities with air permit applications pending. Further, no such facilities can be permitted unless and until they conduct monitoring to determine their effect "on air quality" in the area. This language is not limited to NAAQS monitoring on a pollutant-by-pollutant basis and instead appears to require monitoring that goes beyond a specific NAAQS pollutant to determine the entire air quality of the area.

2. *EPA has authority under § 7475 to consider cumulative impacts of all pollutants when reviewing BACT analyses for PSD permits.*

Included in the preconstruction requirements for facilities seeking to obtain PSD permits is a type of cumulative impacts analysis.

Part (a)(3) of this section states that no major emitting facility may be constructed in any area where this part applies unless "the owner or operator of such facility demonstrates . . . that *emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of* any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, (B) *national ambient air quality standard* in any air quality control region, or (C) *any other applicable emission standard or standard of performance under this chapter*."[52] Here, "this chapter" refers to the CAA as a whole and not simply the PSD provisions.[53]

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[50] *Id.* at § 7470(5) (emphasis added).
[51] *Id.* at § 7475(a).
[52] *Id.* at § 7475(a)(3) (emphasis added).
[53] *See Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 331 (2014) (explaining that the phrasing "under this chapter" indicates "the entire Act"); *see also Alabama Power Co. v. Costle*, 636 F.2d 323, 404 (D.C. 1979) (stating that "The language of the [Clean Air] Act does not limit the applicability of PSD only to one or several of the pollutants regulated under the Act . . . .").

Although hazardous air pollutants (HAPs) fall outside of the PSD program, and therefore this section of the CAA does not require permittees to demonstrate that their emissions will not cause or contribute to violation of any ambient air standard that may exist for HAPs,[54] the EPA should nonetheless cumulatively consider HAPs when determining Best Available Control Technology (BACT) for PSD permittees. In this way, HAP emissions from PSD sources are relevant for determining emissions limits for pollutants covered by PSD permits.

Part (a)(4) of this section discussing preconstruction requirements states that no major emitting facility may be constructed unless "the proposed facility is subject to the best available control technology for each pollutant subject to regulation under this chapter emitted from, or which results from, such facility."[55] BACT is an "emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter emitted from or which results from any major emitting facility" which is determined "on a case-by-case basis, *taking into account energy, environmental, and economic impacts and other costs . . . .*"[56] Although it appears HAPs are precluded from the part requiring "maximum degree of reduction of each pollutant subject to regulation under this chapter" (given the §7412(b)(6) language dismissing HAPs from the PSD provisions), they are relevant when considering "energy, environmental, and economic impacts and other costs." Further, in the definition of BACT, the Clean Air Act provides: "In no event shall application of 'best available control technology' result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 7411 or 7412 of this title."[57] Section 7412 is the section of the CAA on hazardous air pollutants. Thus, when determining BACT, EPA must consider HAPs.

In *North County Resource Recovery Assoc.*, the Environmental Appeals Board held that "if application of a control system results directly in the release (or removal) of pollutants that are not currently regulated under the Act, the net environmental impact of such emissions is eligible for consideration in making the BACT determination."[58] Put another way, the Board stated that "EPA may ultimately choose more stringent emission limitations for a regulated pollutant than it would otherwise have chosen if setting such limitations would have the incidental benefit of restricting a hazardous but, as yet, unregulated pollutant."[59] Its reasoning was that the relevant PSD provision, § 7479(3), requires consideration of environmental impacts when determining BACT. As the EPA similarly articulated in its Cumulative Impacts Addendum, "EPA has long recognized that, in establishing BACT for pollutants regulated under PSD, analysis of control technologies for PSD pollutants could also consider their relative ability to control emissions of pollutants that are not PSD pollutants."[60]

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[54] 42 U.S.C. § 7412(b)(6). Louisiana has set ambient air standards for Toxic Air Pollutants (TAPs), which include most or all HAPs.
[55] *Id.* at § 7475(a)(4).
[56] *Id.* at § 7479(3) (emphasis added).
[57] *Id.*
[58] *North County Resource Recovery Assoc.*, 2 E.A.D. 229, 229 (EAB 1986).
[59] *Id.*
[60] *EPA Legal Tools*, *supra* note 21, at 11.

Thus, even if particular pollutants do not themselves fall under PSD permitting, the EPA must cumulatively consider all pollutants when determining BACT; technology which is better at curbing non-PSD pollutants would be considered BACT and therefore must be preferred. This is itself a type of cumulative impacts analysis because it compels consideration of pollutants not covered by PSD when setting emissions limits for pollutants that are covered by PSD.

3. EPA has authority under § 7475 to conduct a cumulative analysis of ambient air quality for NAAQS and to require additional ambient air monitoring.

Part (e)(1) of the same section on preconstruction requirements reads: "The review provided for in subsection (a) shall be preceded by an *analysis* . . . [conducted by the State/local government/major emitting facility permittee itself] *of the ambient air quality at the proposed site and in areas which may be affected by emissions from such facility* for each pollutant subject to regulation under this chapter which will be emitted from such facility."[61] This analysis is used to demonstrate the requirements under (a)(3), i.e., that emissions from the facility will not cause or contribute to air pollution in excess of any emissions standards set forth under the CAA.

In its Cumulative Impacts Addendum, the EPA explains that "If an *initial estimate of the ambient concentration increase* resulting from increased emissions from a new or modifying source *indicates that these emissions have the potential to cause or contribute to a violation of a NAAQS, then a cumulative analysis of concentrations of that air pollutant should be undertaken*, as described in EPA's *Guideline on Air Quality Models*" (i.e., Appendix W of 40 C.F.R. pt. 51).[62] This analysis incorporates background concentrations of NAAQS pollutants, which includes impacts from other sources.[63]

Air monitoring networks must be configured so that they sufficiently account for impacts from all nearby sources when measuring background NAAQS concentrations. To comply with § 7475(e)(1) in conducting an accurate ambient air analysis, a monitoring network needs to accurately capture the air quality by being appropriately placed near where the brunt of pollution exists.

However, Louisiana's air monitors are not appropriately placed near where the brunt of pollution exists, as is evidenced by the monitors in the areas of St. Rose and Mossville. Using the cumulative risk analysis provided in the first part of this comment, EPA should establish a monitoring site in St. Rose that includes continuous $PM_{2.5}$ monitoring given the large number of sources of $PM_{2.5}$ and, in particular, $PM_{2.5}$ precursors (e.g., VOCs) in the vicinity.[64] For example,

[61] 42 U.S.C. § 7475(e)(1) (emphasis added).
[62] *Id.* (emphasis added); 40 C.F.R. pt. 51, App. W § 9.2.3(c).
[63] *EPA Legal Tools* at 10; 40 C.F.R. pt. 51, App. W § 9.2.3(a)(ii).
[64] LDEQ Annual Certified Emissions Data 2015-Present. (Feb. 14, 2024), *available at* https://www.deq.louisiana.gov/page/eric-public-reports.

there were **885 tons** of VOCs emitted within 3 miles of the former St. Rose air monitoring site in 2022, based on self-reported industry data.[65]

Similarly, EPA must establish a monitoring system in the area of Mossville that is informed by the cumulative risk analysis provided above. Mossville residents are Black Americans severely overburdened by industrial pollution. For the past several decades, Mossville residents have suffered the deterioration of their health and well-being and the loss of their historic community due to extremely high levels of harmful air pollution emitted from fourteen surrounding industrial facilities. These facilities have emitted millions of pounds of harmful pollutants. For example, in 2021, the Sasol Lake Charles Chemical Complex (Sasol) emitted over 200 tons of $PM_{2.5}$, over 890 tons of total VOCs, and over 1229 tons of NO_x.[66] That same year, another nearby facility, the Phillips 66 Co. Lake Charles Refinery, emitted over 160 tons of $PM_{2.5}$, over 900 tons of total VOCs, and over 860 tons of NO_x.[67] Two other facilities in the area, the Entergy Lake Charles Power Station and the Westlake Chemical Westlake Petrochemical Complex, emitted over 52 and 163 tons of total VOCs, and over 125 and 770 tons of NO_x respectively.[68] Mossville community members continue to be concerned about the impacts from air pollution emitted by these facilities, as well as serious permit violations repeatedly committed by such facilities. According to EPA data, the Phillips 66 facility located adjacent to Mossville had had "high priority violations of its air permits in every quarter since April 2019, through 2023.[69]

Likewise, when considering cumulative risk in Mossville as discussed above, EPA should require LDEQ to place an ozone monitor in or near Mossville.

In 2015, LDEQ deactivated an ozone monitor in Westlake,[70] despite having just permitted a substantial expansion of Sasol's Lake Charles Chemical Complex. Reported emissions of both NO_x and VOCs have been increasing since that monitor was deactivated, with hundreds of tons per year of additional VOC emissions from Sasol alone in that time.[71] Federal

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[65] Available via LDEQ's Actual Emissions by Radius Report, using GPS coordinates for the site where the St. Rose monitor was previously located at 302 Adams St. (29.9548291, -90.3255732). *See* https://business.deq.louisiana.gov/Eric/EricReports/RadiusReportSelector?.

[66] Sasol Chemicals (USA) LLC – Lake Charles Chemical Complex, Emissions Inventory for 2021, https://edms.deq.louisiana.gov/app/doc/view?doc=13297128 (Apr. 30, 2022).

[67] Phillips 66 Co. – Lake Charles Refinery, Emissions Inventory for 2021, https://edms.deq.louisiana.gov/app/doc/view?doc=13297256 (Apr. 27, 2022).

[68] Entergy Louisiana LLC – Lake Charles Power Station, Emissions Inventory for 2021, https://edms.deq.louisiana.gov/app/doc/view?doc=13266551 (Apr. 26, 2022); Westlake Chemical OpCo LLC – Westlake Petrochemical Complex, Emissions Inventory for 2021, https://edms.deq.louisiana.gov/app/doc/view?doc=13347330 (June 15, 2022).

[69] *See* EPA, ECHO Database, https://echo.epa.gov/detailed-facility-report?fid=110000539757#pane3110000539757 (last visited Apr. 4, 2022).

[70] *See* LDEQ, 2015 Louisiana Annual Network Assessment, 4 (2015), *available at* https://deq.louisiana.gov/assets/docs/Air/Ambient_Air_Data/2015/LDEQ_2015_Annual_Network_Assessment.pdf.

[71] *Compare* Sasol Chemicals (USA) LLC – Lake Charles Chemical Complex, Emissions Inventory for 2014, https://edms.deq.louisiana.gov/app/doc/view?doc=9761916 (Apr. 29, 2015)

regulations require the consideration of numerous factors in designing ozone monitoring networks,[72] and that the design of those networks "be re-examined in periodic network assessments."[73] EPA should require ozone monitoring network in Calcasieu Parish and locate an additional monitor in the area of highest concentration.

Further, because ozone causes adverse health impacts, EPA should require monitoring for the pollutant in areas where people live, specifically in Westlake, where nearby industry emits high levels of ozone precursors.[74] Given that Calcasieu Parish has the highest emissions of nearly
every criteria pollutant than any other parish in Louisiana (except for PM_{10}), the Westlake monitoring system must also monitor for ozone to best protect human health within an adequate margin of safety.[75]

The highly industrialized nature of Lake Charles MSA, and Mossville in particular, are overburdened by high levels of harmful nitrogen dioxide ("NO_2"). NO_2 is part of a group of highly reactive nitrogen oxides, which can cause or worsen respiratory diseases like asthma, reduce lung function, and increase inflammation in airways.[76] Studies have also shown that exposure to NO_2 can lower chances of survival for cancer patients, and may cause cardiovascular harm, lower birth weight in newborns, and increased risk of premature death.[77] Nitrogen oxides are also precursors for ground-level ozone and smog.[78] NO_2 reacts with sunlight and VOCs in the atmosphere to create photochemical smog, a harmful type of smog (of which ozone is a constituent).[79] Elevated risks of death and respiratory illness have been observed in areas with high concentrations of photochemical smog.[80] Given the harmful nature of NO_2, it is imperative that EPA assure that LDEQ carefully evaluate the optimal NO_2 monitor locations to capture the highest measured concentrations and inform and protect communities overburdened with NO_2

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with Sasol Chemicals (USA) LLC – Lake Charles Chemical Complex, Emissions Inventory for 2021, https://edms.deq.louisiana.gov/app/doc/view?doc=13297128 (Apr. 30, 2022).

[72] For example, in locating a site to measure the highest concentration areas, the agency must use emissions inventory data and meteorological data to determine where the area of highest ozone concentrations is likely to be. *See* 40 C.F.R. Part 58 App. D ¶ 4.1(e)-(f).

[73] *Id.* at 4.1(b).

[74] *See* Yuxiu Zhang et al., *Distribution Characteristics of Volatile Organic Compounds and Contribution to Ozone Formation in a Coking Wastewater Treatment Plant*, 17 Int'l J. Env't Pub. Health 553, 553 (2020) ("Volatile organic compounds (VOCs) are main precursors of ozone formation . . . .").

[75] *See* LDEQ, https://business.deq.louisiana.gov/Eric/EricReports/ParishReport (last visited Apr. 11, 2023) (reporting 2021 reported emissions in Louisiana). Calcasieu Parish 2021 emissions include: $PM_{2.5}$ (2,196 tons), NO_x (16,380 tons), SO_2 (19,148 tons), PM_{10} (2,834 tons).

[76] *See* American Lung Association, Nitrogen Dioxide (last visited Apr. 11, 2023), https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/nitrogen-dioxide.

[77] *Id.*

[78] Edgar R. Stephens et al., *Reactions of Nitrogen Dioxide and Organic Compounds in Air*, 48 Industrial & Engineering Chemistry 1498, 1498 (1956).

[79] Bina Rani et al., *Photochemical Smog Pollution and its Mitigation Measures*, 2 J. Advanced Sci. Rsch. 28, 28-9 (2011).

[80] *Id.* at 29.

emissions. LDEQ's proposed 2023 monitoring plan is insufficient to meet the monitoring needs of communities disproportionately exposed to NO_2.

LDEQ's 2023 monitoring plan includes the bare minimum number of monitors in the Lake Charles area despite federal regulations demonstrating an expectation that more than the minimum number of monitors will be required to achieve monitoring network objectives. 40 C.F.R. § Pt. 58, App. D § 1.1.2 ("The total number of monitoring sites that will serve the variety of data needs will be substantially higher than these minimum requirements provide."). However, LDEQ only operates four monitors in the entire Southwest Louisiana region. And only one of those — the Westlake monitor — measures NO_2. As explained below, solely monitoring NO_2 at Westlake location does not support the mandatory objective of assuring compliance with the NAAQS, because it is not in the area where the highest concentrations of NO_2 are expected.

The current NO_2 monitor is not placed in the locations and manner that captures the peak predicted NO_2 concentrations, as required by EPA regulations. 40 C.F.R. Pt. 58, App. D. ¶ 1.1. The regulation necessitates that LDEQ place monitors in locations that will capture the peak pollution concentrations caused by a particular source. *Id.* LDEQ failed to place monitors in locations with the highest predicted concentration of NO_2 pollution.

CONCLUSION

Louisiana Community Groups, composed of residents of south Louisiana who experience high exposure to multiple air pollution sources, fully support EPA initiatives that analyze the cumulative risks of air pollution and air toxics in communities. A pressing need exists for this analysis for the people of south Louisiana. EPA has clear statutory and regulatory authority to apply cumulative risk assessments in all aspects of its CAA duties, and particularly to its permitting regime. Cumulative risk assessments provide a health-based tool for EPA to determine which among the many permits it must review to prioritize, appropriately focusing EPA efforts on permits for facilities in communities with the most exposure and risk. With Congress's broad statutory mandate to EPA in the CAA to protect health, EPA plainly has a duty to weigh human health risks in its permitting procedures.

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