

October 3, 2023

Submitted via tox@tceq.texas.gov

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Texas Commission on Environmental Quality
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Re: Setting a target cancer risk level of 1×10^{-6} for screening levels that are used in Texas's air permitting program and compared to ambient air monitoring data.

Dear Dr. Lange:

The undersigned organizations submit these comments on the Texas Commission on Environmental Quality's ("TCEQ's") proposal setting a target cancer risk level for screening levels in TCEQ's air permitting program and ask that the following recommendation be adopted.¹ Specifically, we ask that TCEQ tighten the risk level for all exposures to 1×10^{-6} since this proposal fails to address all of the Sunset Commission's recommendations related to risk levels and fails to account for (1) existing regional differences in background air quality, (2) the cumulative impact of multiple chemicals on frontline communities, (3) TCEQ's role in being a leader for this region on air pollution because of the federal government's failure to better protect Texas residents, and (4) state law requiring TCEQ to protect public health. This request is supported by TCEQ's own statement that:

[t]arget risk levels ("TRLs") represent levels of chemicals that are considered to confer **no significant risk** from long-term exposure. TRLs are set by policy makers and risk managers as a necessary step in the process of **developing cleanup levels, screening levels, and acceptable chemical** concentrations in air or other media using a risk-based decision-making process.²

As such, TCEQ should take this opportunity to both comply with all the Sunset Commission's recommendations, but also ensure it meets its statutory requirements to better protect public health from air pollution by setting this base line standard at a risk level that best protects the public.

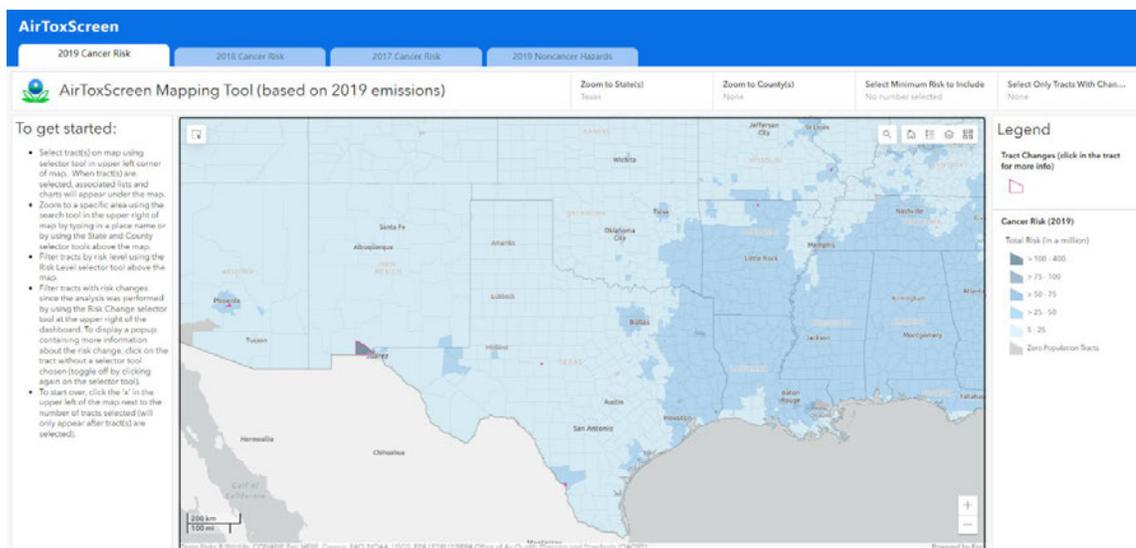
¹ TCEQ's proposal is allegedly in response to the Sunset Commission's recommendation to adopt by rule items related to toxicity but ignores the totality of the recommendations. As such, these comments focus only on TCEQ's proposal to adopt by rule this toxic risk level (TRL). Because this proposal fails to address all the recommendations by the Sunset Commission as it related to toxicity—TCEQ again fails to be transparent. *See* Sunset Advisory Commission Staff Report with Final Results at 33. https://www.sunset.texas.gov/public/uploads/2023-08/Texas%20Commission%20on%20Environmental%20Quality%20Staff%20Report%20with%20Final%20Results_6-26-23.pdf² https://www.tceq.texas.gov/downloads/toxicology/recommended_action.pdf (emphasis added).

² https://www.tceq.texas.gov/downloads/toxicology/recommended_action.pdf (emphasis added).

1. TCEQ Should Require a 1×10^{-6} Standard TRL to Address the Regional Reality that Texas has some of the Worst Air Quality in the Nation.

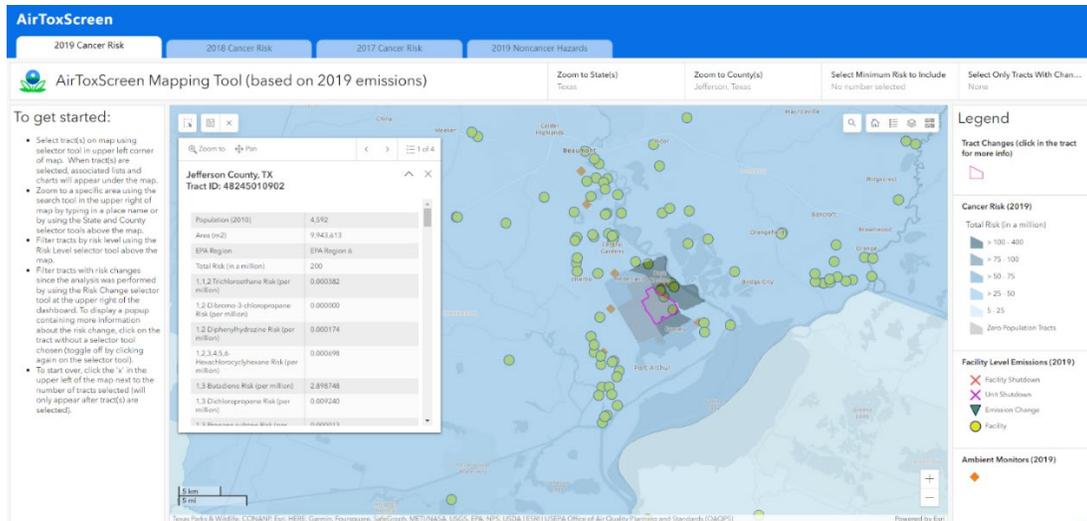
In Texas, much of the elevated cancer risk from air pollution is concentrated in clustered hotspots along the southeastern portion of the state (see map below). These communities face greater burdens from air pollution and toxic waste sites, such as superfund sites. Areas like Jefferson, Texas face cancer risks from air pollution as high as 200-in-1 million – which is far too high and exceeds TCEQ’s own current guidance. The federal Environmental Protection Agency (“EPA”) continues to fail to protect Texas residents even though its own databases demonstrate that these risks are far greater than EPA’s presumptive acceptable level for cancer. Thus, TCEQ should take these regional differences into account when setting this overarching policy decision related to the TRL.

According to EPA’s own AirToxScreen, the southeastern portion of Texas houses the greatest number of industrial facilities, often clustered along the Houston ship channel. AirToxScreen is “a screening tool to provide communities with information about health risks from air toxics.”³ In addition to the mapping feature, AirToxScreen includes data files that can be downloaded to assess modeled ambient air concentrations and risks from hazardous air pollutants. As demonstrated in the map below, communities in southeastern Texas are exposed to multiple sources and types of pollution. A review of the 2019 AirToxScreen assessment results showed that Texas had nine of the twenty census tracts with the highest cancer risk from air pollution in the entire country – with risks between 200-400 per million – over 20-40x the presumptive “acceptable” risk level under TCEQ’s current proposal.⁴ Importantly, this is an **existing risk** and the current proposal does not account for the legacy pollution that has resulted in elevated cancer risks across this great state.



³ EPA, Air Toxics Screening Assessment, <https://www.epa.gov/AirToxScreen>.

⁴ EPA, 2019 AirToxScreen National Cancer Risk by Pollutant (xlsx), https://www.epa.gov/system/files/documents/2022-12/2019_National_CancerRisk_by_tract_poll.xlsx.



While the federal government has articulated a range of risk levels, it continues to fail to protect Texans from the worst air pollution in the country. The national average for cancer risk from air pollution falls closer to 30-in-1 million.⁵ Texas should not allow communities who have already faced years of undue exposure to multiple sources of pollution to continue to face over 13x the national cancer risk. This rule making can address this inconsistency by setting a tougher standard initially at the TRL stage. By doing so, TCEQ arguably could still make facility by facility decisions regarding certain pollutants throughout the permitting process. Thus, adopting this stricter standard for the TRL allows TCEQ staff to appropriately address the regional differences, as well as best protect communities that are already overburdened.

2. TCEQ Should Adopt a 1×10^{-6} Standard in Order to Recognize the Failure to Address Cumulative Effects for Environmental Justice Communities that Bear the Burden of Industrial Pollution.

This rule should acknowledge the shortcomings of traditional, chemical-by-chemical approaches to risk assessment and of the need to consider real-world, cumulative exposures to multiple chemicals and non-chemical stressors. TCEQ staff require clear guidance—informed by community outreach and collaboration—on how to conduct those assessments and set meaningful permit limits within the context of massive polluting facilities so that actual near term health impacts are minimized.

TCEQ's Guidelines to Develop Inhalation and Oral Cancer and Non-Cancer Toxicity Factors first articulated an excess risk management goal of 1×10^{-5} in order to calculate individual Effects Screening Levels (ESLs).⁶ But these same guidelines assume that 1×10^{-5} risk level is permissible, in part, because:

⁵ *Id.*

⁶ TCEQ Guidelines to Develop Toxicity Factors, found here: https://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-442.pdf

[i]t is also very unlikely that the maximum concentrations of emissions from multiple chemicals from a facility and other facilities (if any) would occur at the same time and place.⁷

TCEQ guidelines then go on to support the initial acceptance of this risk assessment because “few chemicals with a known or assumed non-threshold dose-response assessment are routinely permitted in Texas.”⁸ Yet, this initial threshold adoption is utilized throughout the guidelines—for all chemicals, both carcinogenic and non—in section 1.5.2 entitled Health-based ESLs.⁹ Thus, TCEQ’s assumptions in support of this proposed adoption of 1×10^{-5} is in part dependent on this prior and inaccurate analysis of Texas facilities.

Moreover, this initial TLR would only be utilized for certain categories of toxic exposure. For example, it is well understood that toxicity studies generally follow multiple exposure duration categories:

- Acute - exposure to a chemical for less than or equal to 24 hours.
- Subacute – repeated or continuous exposure to a chemical for greater than one day to one month or less.
- Subchronic - repeated or continuous exposure for 1-3 months, usually a 90-day study in typically used animal species (e.g., rodents).
- Chronic - repeated or continuous exposure for longer than 3 months, most commonly a 2-year bioassay in typically used animal species (e.g., rodents).

TCEQ’s broad establishment of one standard fails to account for the full recommendations related to toxicity screens from the Sunset Commission’s report. It also fails to address the lived experience of an enormous number of Texans that live, work, play and pray within a one-mile radius of major polluting sources. For example, in Houston alone, comparing the location of major polluting facilities with life expectancy demonstrates a correlation:

⁷ *Id.* at 33.

⁸ *Id.*

⁹ *Id.*

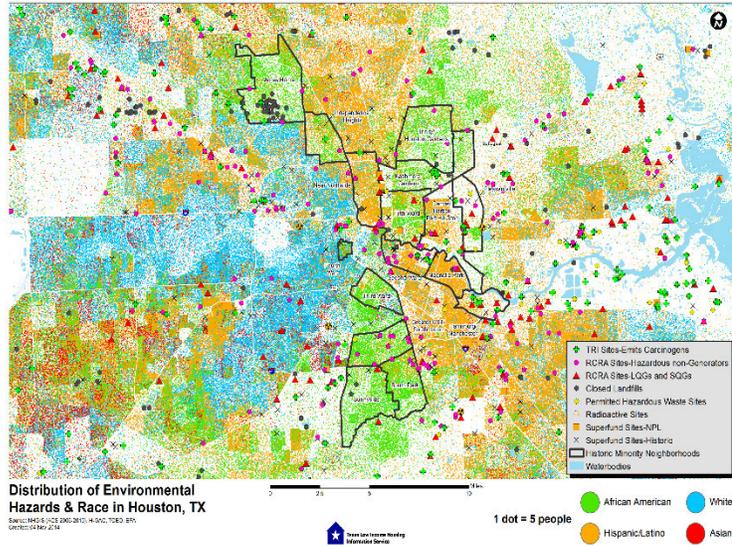
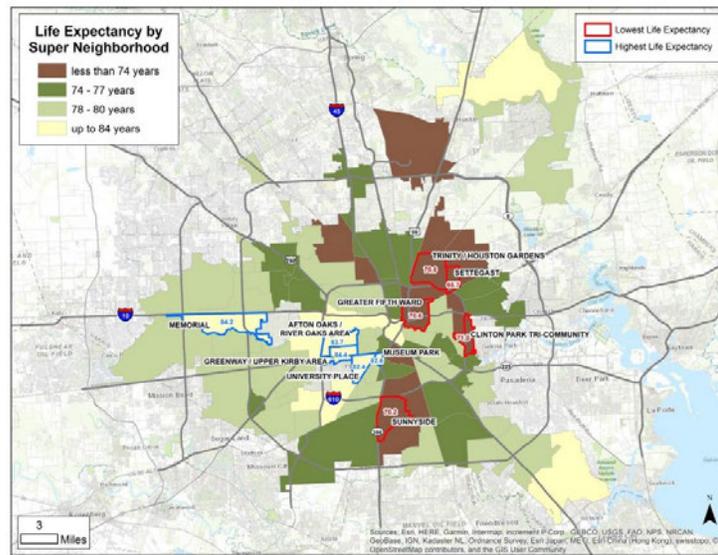


Figure 57: Life Expectancy by Super Neighborhood, Houston/Harris County 2010-2015



Data Source: CDC, National Vital Statistics System. Map by the Houston Health Department.

In order for TCEQ to meet its mission of protecting public health, while also ensuring robust economic development in the state, it must address the realities apparent from land use, where industrial corridors are often hyper focused in smaller areas within a community so that the real impact is borne by those closest to the facility.

Because setting a tiered approach to these TLRs was not considered, TCEQ should set a tighter standard at 1×10^{-6} , allowing toxicologists, state permitting staff, and applicants to better utilize air modeling data and known pollution control equipment to protect communities. With just this change, TCEQ sets the bar for protection of the community at a higher level. Since neither TCEQ nor the Sunset Commission provided any evidence that this would be cost prohibitive to

applicants across the broad range of air permitting programs that this TLR will apply to, it seems unlikely to negatively impact the economic development of the state.

This is also consistent with findings and statements from a variety of authoritative bodies on the need to conduct cumulative risk assessments, and failing that, to provide higher thresholds for protection. For example, the National Academies of Science (NAS) has repeatedly called for the consideration of cumulative exposures in chemical risk evaluations, explaining that “it is difficult to imagine any risk assessment in which it would not be important to understand the effects of co-exposures to agents or stressors that have similar [modes of action] or to identify characteristics of the affected populations that could contribute to vulnerability to a given exposure.”¹⁰ More recently, NAS called on agencies to “move beyond source-by-source and pollutant-by-pollutant ... risk assessment and toward a fuller characterization of the cumulative and potentially synergistic health risks from multiple environmental and social stressors that disproportionately impact communities of color.”¹¹ Similarly, the World Health Organization’s International Programme on Chemical Safety (“IPCS”) has acknowledged “a need ... for assessing the combined risk from exposure to multiple chemicals via all relevant routes and pathways.”¹² And EPA’s independent Science Advisory Committee on Chemicals has affirmed that “[t]he best possible science [for chemical assessment] includes cumulative impacts.”¹³

If TCEQ does not tighten the standard, at least tier this approach to reflect the reality of Texas facilities by opining that the goal for all existing facilities by a date certain is for the 1×10^{-6} to be met. We offer this in part because this rule making is devoid of any analysis, or support, for how these recommendations have come out of TCEQ. In contrast to a reasoned rule making, it seems that TCEQ is scrambling to adopt work from nearly 20 years ago with no analysis of the current cost structures for facilities to comply or the reality of the deep cancer risk millions of Texans are dealing with in their everyday lives.

3. TCEQ Should Protect People where the Federal Government Fails.

We urge TCEQ to adopt the stricter standard of 1×10^{-6} not only to account for the higher background risk within Texas and to mitigate the risk from cumulative exposures that are the reality

¹⁰ Nat’l Rsch. Council, *Science and Decisions: Advancing Risk Assessment*, at 219 (2009), <https://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment>; see also *id.* at 214 (“Ignoring numerous agents or stressors that affect the same toxic process as the chemical of interest and omitting background processes could lead to risk assessments that, for example, assume population thresholds in circumstances when such thresholds may not exist.”); *id.* At 219. (“[F]ormal consideration of numerous simultaneous chemical, physical, and psychosocial exposures with evaluation of background disease processes and other dimensions of vulnerability could quickly become analytically intractable if the standard risk-assessment paradigm is followed, both because of the computational burden and because of the likelihood that important exposure and dose-response data will be missing.”).

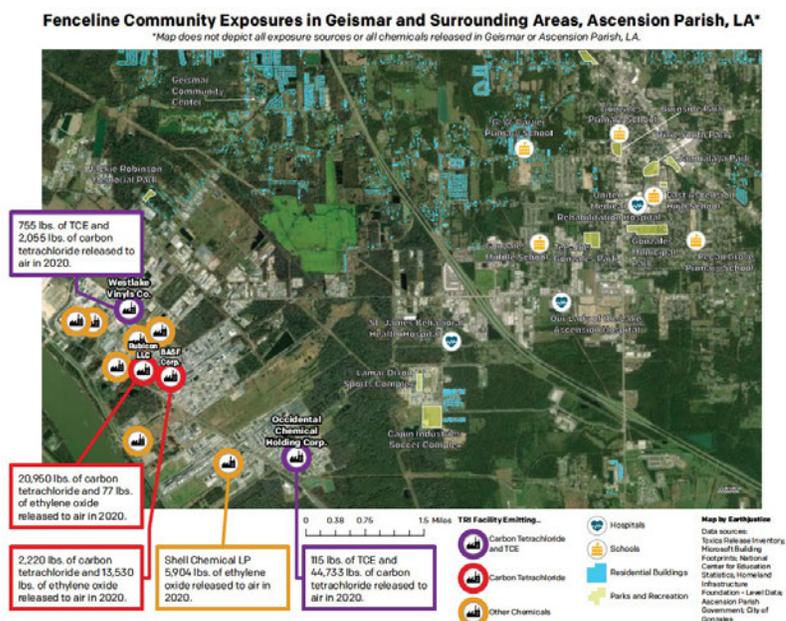
¹¹ *Id.*

¹² Nat’l Acads. of Sci., Eng’g, and Med., *Transforming EPA Science to Meet Today’s and Tomorrow’s Challenges*, at 35 (2023), <https://nap.nationalacademies.org/catalog/26602/transforming-epa-science-to-meet-todays-and-tomorrows-challenges>.

¹³ World Health Org., *Assessment of Combined Exposures to Multiple Chemicals: Report of a WHO/IPCS International Workshop on Aggregate/Cumulative Risk Assessment*, Int’l Programme on Chem. Safety, at 18 (2009), <https://inchem.org/documents/harmproj/harmproj/harmproj7.pdf>.

of frontline communities but also to address the federal government’s failures.¹⁴ For example, in a recent rulemaking related to one toxic air pollutant, carbon tetrachloride (“CTC”), the EPA failed to protect the residents in Houston because it failed to account for the cumulative and background risks already present. EPA recognized that “CTC facilities are concentrated . . . near Houston (6) and Baton Rouge (12)”¹⁵ and yet, EPA did not use a more protective screening level as we urge TCEQ to adopt here. Because TCEQ is the delegated authority, it has the ability—the obligation—to prioritize protecting Texans from cumulative risk with a more restrictive TLR.

A quick review of the largest emitters of CTC provides an example of EPA’s failures. According to 2021 Toxic Release Inventory (TRI) data, the two largest emitters of carbon tetrachloride in the nation are both located Geismar, Louisiana.¹⁶ EPA then calculated elevated cancer risks from each of those facilities individually (exceeding 1 in 100,000 cancer risks at 100 meters and exceeding 1 in 1,000,000 cancer risks as far out as EPA measured), but EPA never considered the risks to people who were exposed from both the Occidental Chemical Company and Rubicon facilities, as well as other industrial facilities in Geismar. (See map below). In other words, as articulated above, EPA continues to fail to protect residents because it fails to account for acute and cumulative impacts. TCEQ should not make the same mistake.



In Texas, a similar example would be the Olin chemical plant in Freeport, TX which releases CTC, methylene chloride, 1,2-dichloroethane, and other carcinogens and is adjacent to

¹⁴ In particular, recent EPA guidance with respect to water quality criteria characterizes the 1-in-1,000,000 threshold as “consistent with Agency-wide practice” and “an appropriate risk [threshold] for the general population.” EPA, *Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health 2-6* (Oct. 2000), <https://www.epa.gov/sites/default/files/2018-12/documents/methodology-wqc-protection-hh-2000-volume1.pdf>.

Thus, adopting that same risk level for air emissions is still consistent with EPA guidelines.

¹⁵ EPA, *Economic Analysis of the Proposed Regulation of Carbon Tetrachloride Under TSCA Section 6(a)* at ES-14 (July 2023) (“Economic Analysis”), <https://www.regulations.gov/document/EPA-HQ-OPPT-2020-0592-0121>.

¹⁶ TRI data from the EPA can be viewed online. See <https://www.epa.gov/toxics-release-inventory-tri-program/find-understand-and-use-tri>

other existing facilities that this proposed TLR would ignore. Communities that are exposed to multiple other carcinogens are more susceptible to harm from just one chemical than communities without those cumulative exposures. Thus, TCEQ should be proactive, recognizing that this cumulative risk exists, and document how setting a lower risk level (1×10^{-6}) initially could seek to better protect communities.

Under the Clean Air Act, Section 112(f)(2) requires that standards for each source category of air pollution “provide an ample margin of safety to protect public health.” Because the TCEQ is Texas’s delegated authority under the federal Clean Air Act, it too must seek to protect public health. Moreover, this provision directs TCEQ to “protect the greatest number of persons possible,” by limiting individual lifetime cancer risk “to no higher than approximately 1-in-10 thousand,” and minimizing the number of persons exposed to risk higher than 1-in-1 million.¹⁷ So while it is true that TCEQ’s proposed 1×10^{-5} standard is within this range, TCEQ ignores that this risk level is utilized throughout its own guidance when setting individual pollutant risk levels that fail to address cumulative impacts as well as the regional differences articulated. This is why adopting a stronger TLR at the front provides greater flexibility to TCEQ toxicologists to address the inherently difficult policy considerations when permitting huge facilities in highly concentrated areas.

The consideration of cumulative exposures and a regional focus are needed to address chemicals’ disproportionate harms to fence line communities and other overburdened populations. Due to discriminatory land use policies, inequitable siting practices, and other forms of environmental injustice, people of color are more likely to live in neighborhoods with multiple polluting facilities clustered close together and are thus more likely to experience cumulative risks from exposure to multiple chemicals. People of color comprise nearly 70% of the population in neighborhoods with high concentrations of polluting facilities, but only 30% of neighborhoods with no polluting facilities.

The risk to these communities is borne out in numerous ways. In 2018, the federal Science Advisory Board (“SAB”) made an observation and affirmative recommendation in its screening methodologies report, stating that “by conducting [an] analysis on a chemical-by-chemical basis, limited by law to the industrial category under [Risk and Technology Review] evaluation, multiple sources of a chemical emitted nearby from other industrial sources may contribute to cumulative effects and chemical interactions because of multiple exposures. The cumulative risk may be missed by the human health risk screening conducted following the RTR method being reviewed.”¹⁸ Another example, one of the largest studies focused on the impact of air pollution from PM_{2.5} and the associated risk for breast cancer, found unequivocally that greater pollution correlated with

¹⁷ Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, Proposed Rule, 79 Fed. Reg. 36,880, 36,885 (June 30, 2014) (quoting Benzene Rule, 54 Fed. Reg. 38,044, 38,045 (Sept. 14, 1989)); see also *NRDC v. EPA*, 529 F.3d 1077, 1082, (D.C. Cir. 2008) (interpreting 42 U.S.C. § 7412(f)(2)) (recognizing the “aspirational goal” of this provision includes reducing lifetime cancer risk to the most-exposed person to 1-in-1 million.).

¹⁸ EPA, Review of EPA’s Draft Technical Report Entitled Screening Methodologies to Support Risk and Technology Reviews (RTR): A Case Study Analysis, Sci. Advisory Bd. (Sept. 13, 2018), https://downloads.regulations.gov/EPA-HQ-OAR-2017-0688-0111/attachment_5.pdf.

higher cancer risk.¹⁹ The study’s authors conclude that rule makings and policies should “consider region-specific associations and the potential contribution of PM_{2.5} chemical constituency in modifying the observed association.”²⁰ In other words, region-specific pollutants likely increase the risk of cancers for individuals. TCEQ’s proposed adoption of 1x10⁻⁵ target risk level for all chemicals does not account for the regionally specific nature of certain chemicals, nor the actual cumulative risk to public health for those living closest to these facilities.

4. TCEQ’s Mission is to Protect Public Health First

It is disingenuous to argue that current background cancer risk across the nation is estimated at 33 out of every 100 persons or that TRLs could not positively affect public health to any degree based on that alleged background risk. First, the National Cancer Institute provides for all risk factors when addressing the overall risk level for individuals, including things like smoking, obesity, and toxics.²¹ TCEQ’s role in setting TRLs relate to its role in permitting facilities next to residents in Texas. Its ability to ensure that industrial contamination and emissions do not increase risks for those communities should drive this process. Second, the current cancer risk is so high due to the extraordinary number of chemicals and other man-made pollutants impacting the air Texans breath and the water Texans drink.

Terminology is important to consider and TCEQ’s own announcement of this proposal attempts to skew this decision. The proposal states, “[f]or example, since background lifetime cancer risk is around 330,000 in 1,000,000, switching from a TRL of 1 in 100,000 to 1 in 1,000,000 reduces an individual’s total lifetime risk from approximately 330,010 to 330,001 in 1,000,000, a reduction of only 0.0009% in total lifetime risk.” The definition of a 1x10⁻⁵ cancer risk is a risk level that implies a likelihood that up to one person out of one hundred thousand equally exposed people would contract cancer if exposed continuously (every day) to a specific concentration over 70 years (an assumed lifetime). This risk would be an excess cancer risk that is in addition to any cancer risk borne by an unexposed person. It is a false equivalency to compare cancer risk, which is a likelihood estimate, to a percent-reduction in total lifetime risk.

Furthermore, while the proposal states that the TRL “represents the logarithmic center of EPA’s acceptable excess cancer risk range”, as described above, there are many communities – especially those located along the south and southeastern portions of the state – that are at the upper-end of the so called “logarithmic center” and have experienced cancer risks above and beyond EPA’s presumptively “acceptable” excess cancer risk range of 100-in-1 million. This TLR will be utilized as the threshold risk level as TCEQ toxicologists and applicants walk through chemical-by-chemical analyses using TCEQ’s outdated guide.²² By tightening this top line standard, TCEQ provides for better protection and can mitigate these significant risks for the most marginalized communities.

¹⁹ Journal of the National Cancer Institute, Ambient fine particulate matter and breast cancer incidence in a large prospective US cohort (Sept. 11, 2023) <https://academic.oup.com/jnci/advance-article/doi/10.1093/jnci/djad170/7260521>.

²⁰ *Id.*

²¹ National Cancer Institute, Environmental Carcinogens and Cancer Risk (April 6, 2023), <https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/carcinogens>.

²² See TCEQ’s guide here: https://www.tceq.texas.gov/assets/public/comm_exec/pubs/rg/rg-442.pdf.

Instead of hiding behind the fatalistic view that one out of every three Texans will have cancer regardless of anything the TCEQ can do, we urge TCEQ to abide by the goal expressed by the Texas state legislature when it adopted laws related to clean air:

POLICY AND PURPOSE. (a) The policy of the state and the purpose of this chapter are to:

- (1) safeguard state air resources from emissions of air contaminants and other pollution;
- (2) protect public health, general welfare, physical property, and the aesthetic enjoyment of air resources by the public; and
- (3) maintain adequate visibility.

(b) It is the policy of the state that the control of **air pollution is essential to the well-being and survival of state inhabitants and the protection of the environment**. The control, prevention, and abatement of air pollution will conserve and develop state natural resources, within the meaning of Article XVI, Section 59(a), of the Texas Constitution, by preventing further damage to the environment.²³

Texas should lead in science, industry, and public health. It can do so by ensuring that its premier state toxicologists have clearer guidance when addressing emissions at facilities that are often acres across with 100's of individual smoke stacks emitting a soup of toxic chemicals. This TLR will be the first guardrail for TCEQ staff and applicants in assessing the types of pollution control equipment necessary for expansion or continued operation and should be set at a level that pushes forward less emissions. Thus, TCEQ should reconsider and set the TLR at 1×10^{-6} .

²³ Texas Clean Air Financing Act, Health & Safety Code Section 383.002; *see also*, Texas Clean Air Act Section 382.002 (“(a) The policy of this state and the purpose of this chapter are to safeguard the state's air resources from pollution by controlling or abating air pollution and emissions of air contaminants, consistent with the protection of public health, general welfare, and physical property, including the esthetic enjoyment of air resources by the public and the maintenance of adequate visibility.”).