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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

CLEAN AIR COUNCIL; COMMUNITIES FOR A BETTER ENVIRONMENT; and NATURAL RESOURCES DEFENSE COUNCIL, INC.,

Plaintiffs,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY; LEE ZELDIN, in his official capacity as Administrator; and NANCY BECK, in her

Case No. 8-25-cv-1473

COMPLAINT

ACTION SEEKING STATEWIDE OR NATIONWIDE RELIEF

official capacity as Principal Deputy Assistant Administrator for the Office of Chemical Safety and Pollution Prevention,

Defendants.

JURISDICTION

1. This case arises under Sections 21 and 6 of the Toxic Substances Control Act (TSCA), 15 U.S.C. §§ 2620, 2605. In February, Plaintiffs submitted a petition to the U.S. Environmental Protection Agency (EPA) under TSCA Section 21(a), asking EPA to issue a Section 6(a) regulation eliminating the unreasonable risks that refineries' use of hydrogen fluoride (HF) poses to public health and the environment. EPA denied the petition on May 12, 2025. This Court has jurisdiction under Section 21(b), *id.* § 2620(b)(4)(A), which empowers Plaintiffs to sue within 60 days of the denial; and under the general federal-question statute, 28 U.S.C. § 1331. This Court considers the petition in a de novo proceeding and may order EPA to initiate the action requested by the petitioners-Plaintiffs under TSCA, 15 U.S.C. § 2620(b)(4)(B). The Court may also award Plaintiffs declaratory relief under the Declaratory Judgment Act, 28 U.S.C. §§ 2201–2202.

INTRODUCTION

2. HF is an extremely corrosive and reactive chemical that readily penetrates and destroys skin and tissue. It is so acutely toxic that exposing just 1% of skin to liquid HF—about a hand's worth—can be a death sentence. Inhalation can also be fatal. The risks of serious injury and death are heightened by the difficulty of diagnosing and treating symptoms of HF exposure.

3. At least 40 oil refineries across the United States use HF to boost fuel octane. When liquid HF held in a tank or pipe escapes into open air above its boiling point (67.1°F), it tends to form a dense, ground-hugging cloud.

4. Refiners' own reports to EPA establish that HF releases could cause toxic clouds to spread into neighboring communities, including in densely populated areas. A "worst-case" release from a refinery in Torrance, California, for example, could cause a toxic cloud to spread more than 6.2 miles from the refinery. About 840,000 people live within that distance. A worst-case release from a refinery in Trainer, Philadelphia, could cause a cloud to spread 17 miles. About 1.9 million people live within that distance of that refinery. A release from a refinery in

Lemont, Illinois, southwest of Chicago, could cause a cloud to spread 22 miles. More than 3.3 million people live within that distance.

5. The movement of HF to refineries extends these dangers. On information and belief, just one U.S. plant—Honeywell's in Geismar, Louisiana—still makes HF for refinery use. Trains and trucks carry HF thousands of miles across our country, jeopardizing people along the way.

6. Because HF is hazardous to all life, a refinery-related release could destroy crops, livestock, wildlife, and natural areas. HF is so corrosive that a release could also damage nearby buildings and vehicles—complicating emergency response, shelter, and escape.

7. Refinery-related HF releases have already harmed people and the environment. A 1987 release from a Texas City refinery caused an HF cloud to spread into a neighborhood. In 2019, an incident at the former Philadelphia Energy Solutions refinery released HF. Numerous "near-miss" events have also occurred—including in Torrance, in 2015, where a large HF release was narrowly avoided. HF has escaped from tanker trucks, and HF railcars have derailed.

8. The chances of more harmful refinery-related HF releases grow by the day. Our country's refineries are aging, making them more prone to equipment failure. So are many of the road, rail, and utility systems that refineries rely on to source HF. Refineries and HF transit routes are ever more vulnerable to extreme weather, endangering people who live or work near them.

9. Through TSCA, Congress gave EPA the power and responsibility to put an end to the most serious chemical threats. Plaintiffs respectfully ask this Court to declare that refinery use of HF presents unreasonable risks of injury to health and the environment, and order EPA to eliminate those risks through prompt rulemaking—as TSCA requires.

PARTIES

Plaintiffs

10. Plaintiff Clean Air Council (CAC) is a nonprofit environmental health organization headquartered in Philadelphia, Pennsylvania. CAC has been working to protect everyone's right to a clean and healthy environment for over 50 years. The organization has members throughout Pennsylvania and the mid-Atlantic region who support its mission. CAC

contacted the Chemical Safety Board requesting an investigation immediately after a 2019 HF release from the former Philadelphia Energy Solutions refinery, and has advocated to reduce toxic pollution from the HF-using refinery in Trainer, Pennsylvania. CAC helped organize concerned residents near the Trainer refinery to form Marcus Hook Area Neighbors for Public Health, which seeks to reduce the public health impacts of the Trainer refinery and other facilities.

11. Plaintiff CAC's members have health, aesthetic, and recreational interests in reducing and eliminating the risks of a harmful HF release from nearby refineries, and from trucks and trains delivering HF to refineries.

12. For example, CAC Member Pamela Verdi lives less than a half mile from the Trainer Refinery, well within the potential impact zone of an HF release. She is worried about her safety, but more concerned about the risk to her family. She believes that her 77-year-old mother, who lives right behind her, "would never be able to withstand" an HF exposure. Ms. Verdi's daughter and five grandchildren, the youngest of whom is seven months old, live across the street from the refinery, and thus are at even greater risk.

13. CAC member Elizabeth Robinson has lived about a mile from the Trainer Refinery for most of her life. She is concerned about the harm that an HF release could cause to herself and her community, and would also like to see the risk reduced for the younger generations, including her son and his future family. She considers the risk enhanced by the recent closure of local hospitals, which means that in the event of a release, the nearest hospital that could treat victims is 20 minutes away when there is no traffic.

14. Plaintiff Communities for a Better Environment (CBE) works to fight toxic pollution and to build a resilient, just, renewable future envisioned by the environmental-justice communities where CBE organizes. CBE is headquartered in Huntington Park, California, and has offices across the state, including in Wilmington. CBE works with the pollution-burdened communities of Richmond, East Oakland, Southeast Los Angeles, and Wilmington to support the communities' self-empowerment around environmental decision-making. CBE believes that people have a right to breathe clean air and drink clean water in the environments where they live, work, go to school, play, and pray, regardless of race, sexual orientation, age, culture, ability,

nationality, or income. CBE has advocated for state and local actions to eliminate the use of HF at the Torrance and Wilmington refineries.

15. Plaintiff CBE's members have health, aesthetic, and recreational interests in reducing and eliminating the risks posed by a harmful HF release from nearby refineries, and from trucks and trains delivering HF to refineries.

16. For example, CBE member Emilza Guzman lives about 2.5 miles from the Wilmington refinery. Living within the refinery's proximity, Guzman feels uneasy and unsafe due to the ever-present danger posed by HF. Guzman is also concerned by the possible damage that released HF could cause to people in the neighborhood.

17. Plaintiff Natural Resources Defense Council (NRDC) is a national organization with offices across the country, including in Southern California and Chicago. NRDC uses science, policy, law, and people power to protect public health, confront the climate crisis, and safeguard nature. NRDC has long advocated for more stringent regulations of toxic chemicals, including under TSCA. For example, NRDC collaborated with partners to challenge EPA's inadequate evaluation of the risks presented by the chemical methylene chloride—prompting more protective regulation.

18. NRDC has members who live and work near HF-using refineries in densely populated areas, including metropolitan Los Angeles and Philadelphia, and along transportation corridors that serve those refineries. Some of those members worry that they will be seriously injured or killed by a toxic HF cloud following a refinery- or transportation-related release. An HF release would also harm ecological resources, impairing NRDC members' aesthetic and recreational interests.

19. For example, NRDC member Steve Goldsmith lives in Palos Verdes Estates, California, about five miles from the Torrance refinery. He regularly shops, goes to doctor's appointments, works out, and meets friends in Torrance, often within a mile of the refinery. During the 2015 explosion that nearly ruptured an HF tank, industrial ash fell on him and his car. Mr. Goldsmith fears that he may face serious injury or death in the event of an HF release. An HF

release would also cause ecological harm to the nearby Madrona Marsh nature preserve where he enjoys observing birds and other wildlife.

20. NRDC member Mary Pope lives in Torrance, California, about four miles from the Torrance refinery, and knows that HF is used there. After she moved to her current home in 2016, she learned from a neighbor that ash and debris had fallen in her yard from the 2015 refinery explosion. Because Ms. Pope lives within the "danger zone" of an HF release, she fears for her safety.

21. NRDC member Vanessa Poster lives with her husband and her 98-year-old father in Redondo Beach, California, about three miles from the Torrance refinery. Ms. Poster and her family drive into or through Torrance many times each week for doctor's appointments, when commuting to or from work, or when visiting friends for lunch and other social activities. Ms. Poster is deeply worried that if an HF release occurred, there would not be enough time to evacuate because her father uses a wheelchair and the limited roads out of the city would be quickly jammed. She and her family would have to shelter in place, but the only room with all interior walls is a bathroom that fits only two people standing upright.

Defendants

22. Defendant EPA is the federal agency Congress charged with administering TSCA.

23. Defendant Zeldin, sued in his official capacity, is EPA's Administrator and one of the officials to whom Plaintiffs addressed their February 11, 2025, petition.

24. Defendant Beck, sued in her official capacity, is EPA's Principal Acting Deputy Administrator for the Office of Chemical Safety and Pollution Prevention, which directs EPA's TSCA work. Defendant Beck signed EPA's May 12, 2025, letter denying Plaintiffs' February 11, 2025, petition.

VENUE

25. Venue is proper in this Court under 28 U.S.C. § 1391(e) because Plaintiff CBE resides in Huntington Park, within this judicial district. Venue is also proper because a substantial part of the events and omissions giving rise to Plaintiffs' claims have occurred in this district, which is home to two HF-using refineries (Torrance and Wilmington).

BACKGROUND

I. Congress empowered citizens to compel EPA to eliminate unreasonable risks posed by toxic chemicals

26. In enacting TSCA, Congress declared that "[t]he time has passed where human health and the environment is protected only after serious injury has occurred." S. Rep. No. 94-698, at 6 (1976). TSCA established "a comprehensive program to anticipate and forestall injury to health and the environment from activities involving toxic chemical substances." *Envtl. Def. Fund v. Reilly*, 909 F.2d 1497, 1498 (D.C. Cir. 1990) (cleaned up). "[T]o protect against lax administration," S. Rep. No. 94-698, at 13, Congress included "unusually powerful procedures for citizens to force EPA's hand," *Trumpeter Swan Soc'y v. EPA*, 774 F.3d 1037, 1039 (D.C. Cir. 2014).

27. Section 21 of TSCA empowers "[a]ny person" to petition EPA, through its Administrator, "to initiate a proceeding for the issuance" of a regulation under "section 2605" of TSCA. 15 U.S.C. § 2620(a). Section 2605, codified at 15 U.S.C. section 2605(a), is also known as Section 6(a). *Id.* § 2605(a).

28. Section 6(a) provides that if "the manufacture, processing, distribution in commerce, use, or disposal of a chemical substance or mixture . . . present[] an unreasonable risk of injury to health or the environment," EPA "shall" eliminate that unreasonable risk through regulation. *Id.* § 2605(a).

29. Risk is a function of hazard and exposure. EPA's Office of Chemical Safety and Pollution Prevention defines "hazard" as a chemical's potential to "cause an increase in the incidence of specific adverse health or environmental effects." Office of Chem. Safety and Pollution Prevention, EPA, 740-R17-001, Guidance to Assist Interested Persons in Developing and Submitting Draft Risk Evaluations Under the Toxic Substances Control Act 18 (2017). Exposure describes human or environmental contact with a chemical.

30. If EPA fails to grant or deny a section 21 petition within 90 days, petitioners may sue in federal district court "to compel [EPA] to initiate a rulemaking proceeding as requested in the petition." 15 U.S.C. § 2620(b)(4)(A).

31. "[P]etitioner[s] shall be provided an opportunity to have [their section 21] petition considered by the court in a de novo proceeding." *Id.* § 2620(b)(4)(B).

32. In the case of a petition to initiate a Section 6(a) rulemaking, if petitioners "demonstrate[] to the satisfaction of the court by a preponderance of the evidence" that a chemical (under the relevant "conditions of use") "presents an unreasonable risk of injury to health or the environment," "the court shall order [EPA] to initiate the action requested by the petitioner." *Id.* § 2620(b)(4)(B).

33. In deciding whether a chemical "presents an unreasonable risk," the court must consider risk to "potentially exposed or susceptible subpopulation[s]." *Id.* § 2620(b)(4)(B)(ii). Potentially exposed or susceptible subpopulations include infants, children, and the elderly. *Id.* § 2602(12). The court may not consider "costs or other nonrisk factors." *Id.* § 2620(b)(4)(B)(ii).

II. Refinery use of hydrogen fluoride is extremely dangerous to health and the environment

34. Hydrogen fluoride consists of one hydrogen (H) atom bonded to one fluorine (F) atom. When hydrogen fluoride mixes with water—including in the air, and in people's eyes, mouths, throats, and lungs—it forms hydrofluoric acid.

A. Hydrogen fluoride is extremely dangerous to people

35. HF, including in the form of hydrofluoric acid, is extremely dangerous to people. It burns skin, corrodes tissue, damages organs, and disrupts critical biological processes such as muscle contraction and nerve signaling. Inhaling HF, or having it touch the skin or eyes, can cause serious, permanent injury or death.

36. The Occupational Safety and Health Administration (OSHA) categorizes HF as a "toxic and reactive highly hazardous chemical[]" that presents "a potential for a catastrophic event at or above the threshold quantity [of 1,000 pounds]." 29 C.F.R. § 1910.119 app. A (1992).

EPA's emergency-planning regulations classify HF as an "extremely hazardous" substance. 40 C.F.R. pt. 355, app. A (2008).

37. The severity of harm from HF exposure varies with the amount and concentration of HF, exposure time, and other factors. But exposure to even small amounts at low concentrations can disable or kill, particularly because symptoms may take hours or days to appear, thereby preventing timely diagnosis and treatment.

38. Young children, older adults, and people with preexisting health conditions are particularly susceptible to harm from HF exposure.

1. HF destroys human tissue

39. When HF touches moisture in skin or other tissue, it forms hydrofluoric acid. In this chemical process, HF partially dissociates into hydrogen ions (H+) and fluoride ions (F-). Hydrogen ions and fluoride ions both damage skin and underlying tissue, although they do so in different ways. Hydrogen ions create an acid environment that destroys proteins, which are essential to core cell functions like metabolism. Exposure to concentrated HF (greater than 50%) results in immediate, intensely painful burns, blisters, and lesions. Dilute HF causes more limited skin damage (but can still be deadly, *see infra* ¶¶ 48-50).

40. Fluoride ions readily penetrate skin, and they do so even more easily when skin is already damaged by acidity from hydrogen ions. They then spread through the body. Fluoride ions attack cell membranes, causing cells to liquefy and die. They also destroy cells by binding to calcium and magnesium ions, making them unavailable for crucial cell functions. The resulting tissue destruction can lead to organ damage, permanent disability, or death. In addition, fluoride ions corrode bone by binding to, and stripping away, calcium and magnesium ions.

41. When HF is inhaled at low concentrations, it causes respiratory tract irritation. At higher concentrations, HF damages tissues in the nasal cavity, mouth, and throat. The throat swells and constricts, and a tracheotomy (cutting a hole in the neck to access the windpipe) may be needed to prevent suffocation. As HF continues to move into the lower airway, the bronchial tubes connecting the windpipe to the lungs constrict. This may cause the lungs to collapse. Tissue

damage leads to accumulation of blood and cellular fluid in the lungs, which can lead to respiratory failure and death.

42. HF also harms the eyes. Even at low concentrations, it diffuses in the cornea (the transparent, outer layer of the eye) within minutes, causing burns and, if left untreated, blindness. At higher exposures, HF also penetrates the eyeball and leads to cell death in the optic nerve (which transmits visual signals from the eye to the brain).

2. HF disrupts critical organ systems by binding with chemicals that regulate vital biological functions

43. In addition to being highly corrosive, HF is a systemic toxicant; once it enters one part of the body, HF is carried to other parts of the body via blood and lymph vessels.

44. Indeed, fatal HF exposures most commonly arise from systemic toxicity. HF's fluoride ion binds strongly with calcium and magnesium, electrolytes that regulate essential biological processes including heartbeat, muscle contraction, and nervous system signaling.

45. As HF spreads through the body, blood levels of calcium and magnesium drop while levels of potassium rise and acid builds up in the blood and tissues. These disruptions to the tightly regulated balance of chemicals in the body can interfere with the normal functioning of the cardiovascular system, leading to arrythmia (irregular heart rhythms), seizures, and death through cardiac arrest.

46. Other organ systems may also be affected. People exposed to HF have reported nausea, vomiting, and gastrointestinal distress. As fluoride ions cause potassium to flow out of cells, changes to nerve endings may cause extreme pain.

47. Contact with just a small amount of concentrated HF can cause fatal systemic effects. Exposing as little as 1% of one's skin to liquid HF—about a hand's worth—can be deadly.

48. Even contact with low concentrations of HF can be fatal if timely action is not taken to remove and neutralize HF to prevent substantial absorption by organ systems.

3. HF's immediate hazards to health are compounded by the challenges of diagnosing exposure and treating victims

49. Given HF's extreme hazards, timely diagnosis and treatment are critical. However, symptoms of HF exposure may not be immediately observable. This is especially true for low-concentration exposures, and it is true even for exposures that may later prove fatal. After inhalation of HF, respiratory symptoms may take 12 to 36 hours to develop. Visible effects of skin exposure may also take 12 to 36 hours to manifest.

50. Delay in the onset of symptoms can mislead both victims and medical professionals. Victims might not seek prompt treatment. First responders and other medical personnel might not recognize HF exposure quickly enough to provide effective treatment. Failure to identify HF exposure can hinder or prevent proper decontamination, thereby increasing the risk of secondary exposures, such as through contact with contaminated clothing. Even when HF exposure is correctly identified, treatment may not be fast enough to save life or prevent permanent damage to tissue and organs.

51. People who survive HF exposure can suffer long-term and irreversible physical harm. Survivors of inhalation injury may develop chronic lung disease. Burns caused by exposure to concentrated HF may result in persistent pain, scarring, or permanent tissue death. Eye exposure may result in prolonged or irreversible visual defects, cause permanent blindness, or destroy the eye.

4. HF is particularly hazardous to children, people over 65, and people with preexisting heart and lung condition

52. Children, including infants, are more susceptible than adults to HF's hazards. Children breathe at a higher rate owing to their small size, rapid growth, fast metabolism, and elevated activity level; they also have a larger lung surface area relative to their body size. Thus, when comparing children and adults inhaling the same HF-contaminated air over the same time, children are exposed to a significantly higher "dose" of HF. Children also have smaller airway diameters, which makes them more likely to suffocate as HF causes their airways to constrict. In addition, because of their relatively larger surface-area-to-body-weight ratio, children are far

more vulnerable to HF's hazards through skin exposure.

53. People over 65 are also more vulnerable to HF's hazards compared to younger adults. As people age, changes occur in their heart and blood vessels that increase their risk of cardiovascular disease. Their lung function and capacity also decline. These changes make elderly people more susceptible to heart failure, respiratory distress, and other heart- and lung-related harms caused by HF. In addition, people over 65 are less likely to respond well to treatment for HF exposure, including cardiovascular interventions that may disrupt heart rhythms.

54. Preexisting heart and lung conditions likewise make people more susceptible to the hazards that HF poses to those organ systems. A study of people exposed to the 1987 Texas City refinery HF release found that those with preexisting pulmonary conditions, and those who smoked two or more packs of cigarettes per day, experienced more severe symptoms both immediately following the release and two years later. The National Research Council also found that individuals with asthma may have more severe responses to HF exposure.

B. Refinery use of HF threatens the health of millions

55. HF's normal boiling point is 67.1° Fahrenheit. When liquid HF stored under pressure is released above its normal boiling point, it will form a ground-hugging, spreading cloud. HF is commonly transported to and stored at refineries as a pressurized liquid.

56. The federal government has established Acute Exposure Guideline Levels (AEGLs) for HF. AEGLs represent inhalation exposure levels for the general public that, if exceeded, could harm the health of those exposed. AEGL-3 refers to the level "above which it is predicted that the general population, including susceptible individuals, could experience life-threatening adverse health effects or death." Subcomm. on Acute Exposure Guideline Levels, Nat'l Rsch. Council (NRC), 4 Acute Exposure Guideline Levels for Selected Airborne Chemicals 3 (2004) [hereinafter AEGLs for Selected Airborne Chemicals]. AEGL-2 refers to the level "above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape." *Id.* AEGL-1 refers to the level "above which it is predicted that the general

population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic or nonsensory effects." *Id.*

57. The gravity of HF's effects increases the longer one is exposed. The AEGLs for HF exposures of up to an hour are as follows:

Assumed exposure timeframe	AEGL-3 (potentially lethal)	AEGL-2 (potentially disabling)	AEGL-1 (potentially harmful but nondisabling)
10 minutes	170 parts per million (ppm)	95 ppm	1 ppm
30 minutes	62 ppm	34 ppm	1 ppm
60 minutes	44 ppm	24 ppm	1 ppm

58. On information and belief, the AEGLs for HF are not sufficiently protective of the general population. For example, the AEGL-3 for HF reflects a prediction that members of the general population exposed to HF for 30 minutes may experience "life-threatening adverse health effects or death" at concentrations above 62 ppm. AEGLs for Selected Airborne Chemicals, *supra* ¶ 56, at 3. However, for multiple reasons, a significant segment of the general population exposed to HF for 30 minutes may actually experience those effects at concentrations lower than 62 ppm. One reason is that the AEGLs address exposure only through inhalation, but people may simultaneously be exposed to HF through their skin or eyes.

59. The federal government has established an Immediately Dangerous to Life and Health (IDLH) level for HF of 30 ppm in air. The National Institute of Occupational Safety and Health (NIOSH) states that "IDLH values reflect an airborne concentration of a substance that represents a high-risk situation that may endanger workers' lives or health." NIOSH, Current Intelligence Bull. No. 66, Derivation of Immediately Dangerous to Life or Health (IDLH) Values vi (Nov. 2013), https://www.cdc.gov/niosh/docs/2014-100/pdfs/2014-100.pdf. An IDLH condition "poses a threat of exposure to airborne contaminants when that exposure is likely to cause death or immediate or delayed permanent adverse health effects or prevent escape from such an environment." *Id.* at xviii.

60. On information and belief, the IDLH level for HF—designed for healthy

workers—would not be protective of the general population. This is because "worker populations . . . traditionally exclude the most sensitive subpopulations," including "children, [the] elderly, and [those] with pre-existing health impairments." *Id.* at 9.

61. At least 40 U.S. refineries use HF. Each of the 42 refineries shown on the following map is a current or recent HF user:

62. Refineries use HF for "alkylation": the production of alkylate, an ingredient in a refinery's formula for gasoline. Alkylation units move HF, other chemicals, and water through a series of pipes and vessels, to cause reactions with hydrocarbons and form alkylate.

63. Refinery owners submit Risk Management Plans (RMPs) to EPA under Clean Air Act Section 112(r), which aims "to prevent the accidental release" of "extremely hazardous substance[s]." 42 U.S.C. § 7412(r)(1). "Extremely hazardous substances" are those "which, in the case of accidental release, are known to cause or may reasonably be anticipated to cause death, injury, or serious adverse effects to human health or the environment." *Id.* § 7412(r)(3). Section

112 identifies "hydrogen fluoride" as an "extremely hazardous substance." *Id.*

64. The following table summarizes recent refiner estimates of how much HF would be released, how far the resulting HF cloud could spread, and how many people live within the potential release zone for a "worst-case" release from the refineries in the listed cities.

Refinery	Estimated pounds of HF released in a "worst-case" scenario (nearest 100 pounds)	Miles to endpoint (HF cloud extent)	People living in potential worst-case release zone
Torrance	110,000	6.2	840,000
Wilmington	610,500	8.7	1,100,00
Channahon	631,700	25	1,270,400
Lemont	302,000	22	3,370,000
Garyville	890,000	25	400,000
Trainer	217,000	17	1,900,000

65. "Miles to endpoint" describes the farthest point in the cloud where airborne HF concentrations could exceed 0.016 milligrams per liter. 40 C.F.R. § 68.22(a)(1); *id.* pt. 68 app. A (Table of Toxic Endpoints, row marked "Hydrogen fluoride / hydrofluoric acid (conc 50% or greater)"). That is equivalent to about 19 ppm——which approaches the AEGL-2 threshold for 60-minute exposures. The "worst-case" release zone describes the circle formed by rotating the "miles to endpoint" distance around the release point (to account for different wind directions).

66. Approximately 19 million people live close enough to an HF-using refinery that they could be exposed to at least AEGL-1 concentrations in an HF cloud in a "worst-case" release, as defined for purposes of RMP reporting.

67. Here are the "worst-case" release zones overlaid on maps of metropolitan Los Angeles, Chicago, and Philadelphia.

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Figure 1: Trainer, Pennsylvania, refinery worst-case release zone

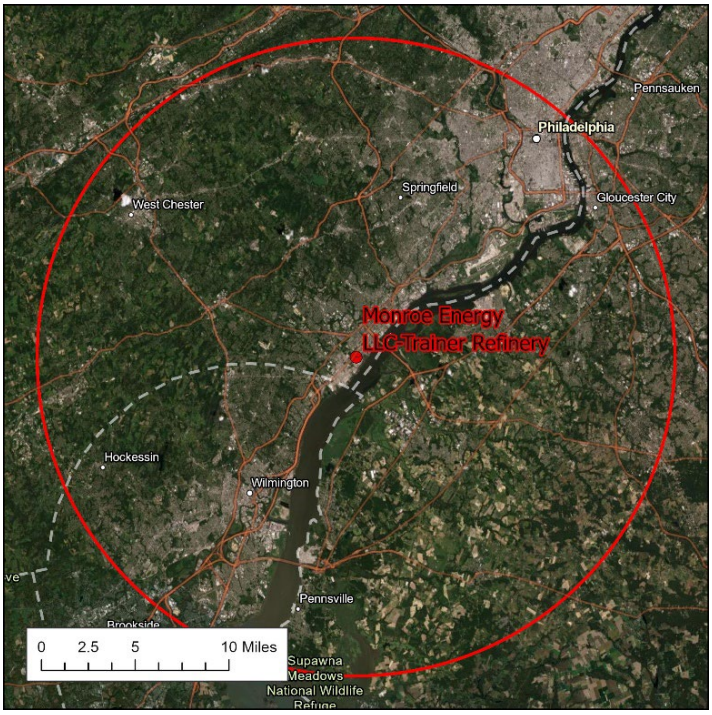


Figure 2: Lemont and Joliet, Illinois, refinery worst-case release zones

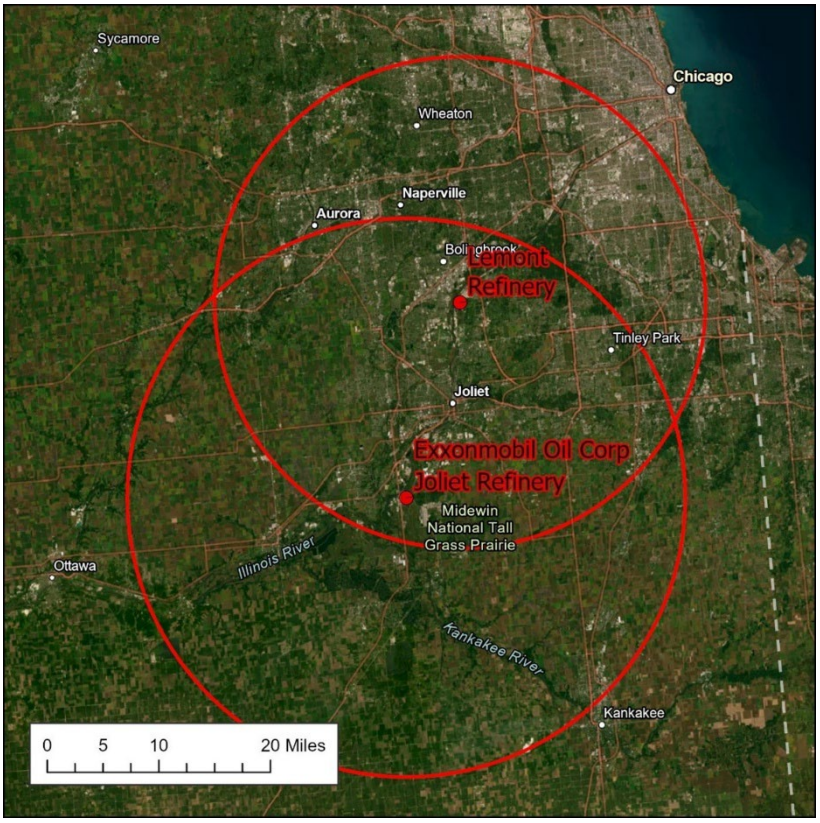


Figure 3: Torrance, California, refinery worst-case release zone

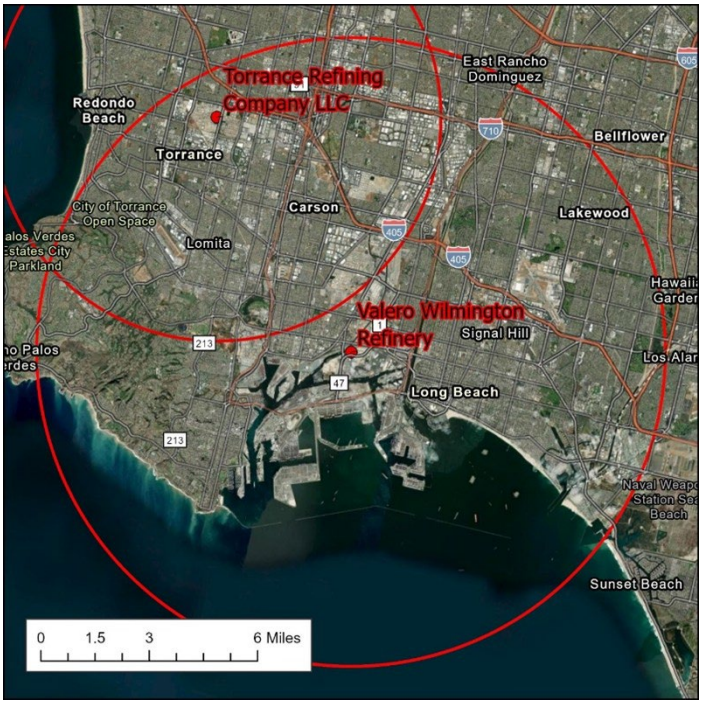
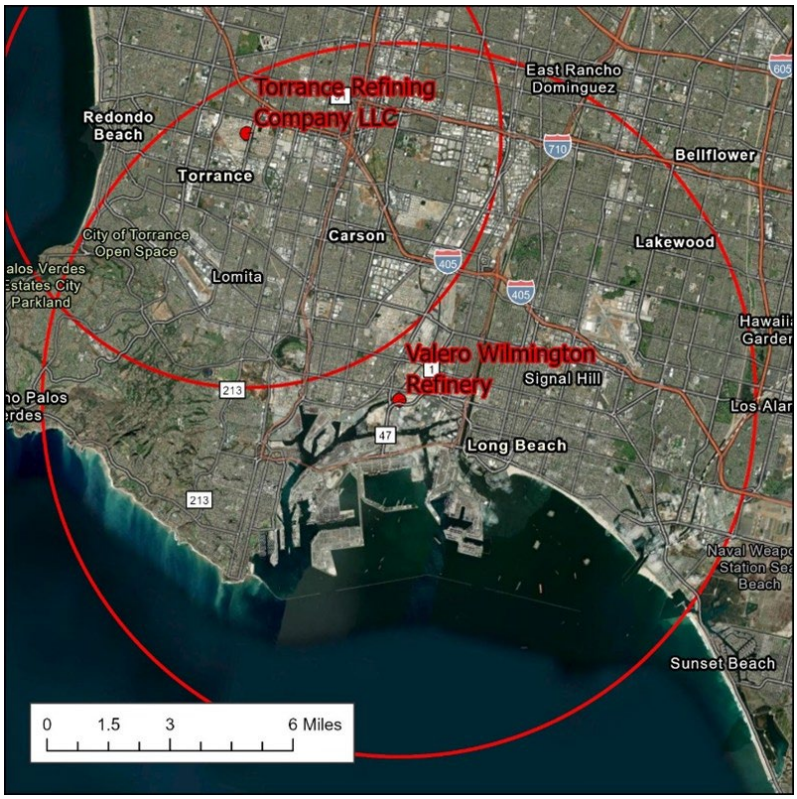


Figure 4: Wilmington, California, refinery worst-case release zone



68. Refineries must replenish their HF supplies to keep operating HF alkylation units. EPA does not require RMPs to describe how refineries source their HF.

69. On information and belief, some refineries, including those in Torrance and Wilmington, California, receive truck deliveries of HF from Honeywell's plant in Geismar, Louisiana.

70. A single HF cargo tanker, which can be mounted on a semi-truck trailer, can carry more than eighteen tons of anhydrous (or pure, unmixed with water) HF.

71. Cargo tankers have released HF in crashes and while unloading.

72. A tanker-unloading failure at Torrance could cause an HF cloud to extend more than six miles from the release point. The following table shows approximately how many people in the general population, and in some particularly susceptible subpopulations, live in the threat zones where HF levels in the cloud could exceed each AEGL:

	People in areas with HF levels at or above AEGL-3	People in areas with HF levels at or above AEGL-2, and below AEGL-3	People in areas with HF levels at or above AEGL-1 and below AEGL-2
Total residential population	83,100	104,200	628,600
Young children (less than 5 years old)	4,200	6,100	35,300
People 65+ years old	13,600	17,200	93,500
People with asthma	7,100	9,200	62,400
People with coronary heart disease	4,200	5,600	35,000
People with chronic obstructive pulmonary disease (COPD)	3,600	4,900	32,800

73. On information and belief, Torrance and Wilmington refinery-bound HF tanker trucks use portions of Interstate 10, including portions serving urban Phoenix, Arizona, and Baton Rouge, Louisiana.

74. If a Los Angeles-bound tanker truck crashed and released HF while passing through central Phoenix, the resulting cloud could extend more than 6 miles from the crash point. The following table shows approximately how many people in the general population, and in

some particularly susceptible subpopulations, live in the threat zones where HF levels in the cloud could exceed each AEGL:

	People in areas with HF levels at or above AEGL-3	People in areas with HF levels at or above AEGL-2, and below AEGL-3	People in areas with HF levels at or above AEGL-1 and below AEGL-2
Total residential population	41,700	33,700	509,100
Young children (less than 5 years old)	3,100	2,300	37,300
People 65+ years old	3,000	2,500	39,500
People with asthma	4,200	3,700	55,600
People with coronary heart disease	2,200	2,100	28,800
People with chronic obstructive pulmonary disease (COPD)	2,500	2,400	33,700

75. On information and belief, HF is delivered by train to the Trainer refinery south of Philadelphia, and the Lemont and Channahon refineries south of Chicago. Trainer-bound HF railcars likely pass through central Philadelphia. Lemont and Channahon-bound trains likely carry HF through central Memphis and Chicago's south suburbs.

76. A single HF railcar can carry more than 87 tons of anhydrous HF.

77. Railcars carrying HF have derailed repeatedly, threatening people's health and disrupting their lives. A 1997 HF release from a Memphis railyard forced the evacuation of about 150 people. The 2012 derailment of HF railcars near Louisville prompted local evacuation and a shelter-in-place order.

78. If a Trainer-bound railcar derailed and released HF while passing through central Philadelphia, the resulting cloud could spread more than five miles from the release point. The following table shows approximately how many people in the general population, and in some particularly susceptible subpopulations, live in the threat zones where HF levels in the cloud could exceed each AEGL:

	People in areas with HF levels at or above AEGL-3	People in areas with HF levels at or above AEGL-2, and below AEGL-3	People in areas with HF levels at or above AEGL-1 and below AEGL-2
Total residential population	43,000	45,000	1,095,700
Young children (less than 5 years old)	800	1,600	65,300
People 65+ years old	5,900	5,800	143,000
People with asthma	4,800	4,800	130,000
People with coronary heart disease	1,900	1,900	72,800
People with chronic obstructive pulmonary disease (COPD)	1,900	1,800	83,400

79. HF clouds can spread rapidly. For example, in a Torrance truck-unloading failure like the one described at paragraph 65, the cloud would spread and HF concentrations at ground level would reach AEGL-3 (the potentially fatal effects level) at rates around 6 miles per hour.

80. HF clouds can resemble water vapor.

81. An HF release may catch many people indoors. The less airtight a building, the more readily outside air will penetrate, and the faster HF levels will build inside following a release. People inside older homes will be less protected than those in newer residences. People in some commercial buildings including schools, restaurants, and factories will also be less protected.

C. Refinery use of HF unreasonably endangers the natural and built environment

82. In addition to harming people, HF can injure other animals, burning their skin and causing organ damage and other serious health problems. HF also kills plant life. Once released, HF can linger in the environment, as it does not biodegrade in soil. Beyond harming terrestrial life as it spreads through air and is deposited in soil, HF dissolves easily in water, contaminating aquatic ecosystems.

83. The 1987 Texas City refinery release that caused an HF cloud to spread into a

neighborhood also killed animals and plants along a three-mile path from the release point. In 2012, an HF cloud from an unloading tanker truck in South Korea killed or injured thousands of livestock and destroyed farmland and crops.

84. Refinery use of HF also threatens the built environment. HF is so corrosive that common materials including glass and aluminum cannot be used in refinery alkylation units. An HF cloud formed during the 2012 truck release in South Korea destroyed nearby houses. In the event of a major HF release, the spreading cloud's corrosive effects on buildings, bridges, and vehicles could make it more difficult for people to evacuate or shelter effectively—and for emergency responders to help.

D. The risks of further refinery-related HF releases that harm people and the environment are substantial, foreseeable, and growing

85. Most of the U.S. refineries still using HF have already reported releasing HF or hydrofluoric acid. At least half have already had a release, explosion, fire, or other incident serious enough to cause off-site consequences.

86. There have already been major HF releases and "near-miss" events at refineries.

87. In 1987, a crane dropped a large piece of equipment on an HF tank at the Texas City refinery. Tens of thousands of pounds of HF escaped, and the cloud drifted past the refinery's fenceline into a neighboring residential area. More than 1,000 people sought treatment; 95 were admitted to the hospital.

88. In 2015, a large pollution-control device at the Torrance refinery exploded. A 40-ton piece of debris struck scaffolding surrounding an HF tank in the nearby alkylation unit, coming within a few feet of the tank itself.

89. In 2019, a 50-year-old pipe at the former Philadelphia Energy Solutions refinery ruptured, causing explosions that hurled wreckage across the Schuylkill River and the release of more than 5,000 pounds of HF (along with propane and other hydrocarbons). A heroic worker was able to divert most of the refinery's HF inventory—339,000 pounds—to underground tanks, helping prevent an even greater catastrophe. The incident injured five refinery workers and a first responder, and the refinery was so badly damaged that it never reopened.

90. This country's HF-using refineries are all more than 40 years old, and some are more than a century old. Aging refineries are generally more prone to failures and releases, in part because original components (such as piping) that have not been replaced or properly maintained have had longer to deteriorate.

91. Since the 1987 Texas City release, at least 26 refineries still using HF for alkylation have had an HF or hydrofluoric acid leak. At least 32 have had at least one explosion or fire. Many have had multiple fires or explosions. At least 21 refineries have had an explosion, fire, or other incident severe enough to require shelter-in-place or evacuation orders for people living or working outside refinery boundaries. More than 500 workers have been injured, and more than 40 have been killed, in a range of incidents at these refineries. At least five refineries have had incidents that injured first responders or people beyond the refinery fenceline.

92. Extreme weather fueled by climate change is likely to increase the frequency and severity of process-safety failures at refineries, including failures that lead to HF releases.

93. Flooding, heat waves, deep freezes, and high winds can damage refinery equipment and cause refineries to lose power. A tornado outbreak in Illinois has already caused the Channahon refinery south of Chicago to lose power. The neighboring Lemont refinery lies almost entirely within a 100-year floodplain, as designated by FEMA.

94. Refinery-related HF releases like those described have already caused considerable harm and disruption to people across our country. On information and belief, these releases have been caused or exacerbated by factors including aging infrastructure, failure to implement best practices relating to safety systems to control and mitigate HF releases, and extreme weather events. Further refinery-related releases, from both refineries themselves and from vehicles used to deliver HF to refineries, are reasonably foreseeable. As our infrastructure keeps aging and our weather becomes ever more extreme, and as implementation of best practices relating to the control and mitigation of HF incidents remains incomplete, refinery-related HF releases similar in seriousness to those have already occurred will become more frequent. For the same reasons, even worse refinery-related releases will become ever more likely.

III. EPA is defying Congress's mandate to eliminate the unreasonable risks Plaintiffs identified in their February 2025 citizen petition

95. On February 11, 2025, Plaintiffs submitted a Section 21 citizen petition to EPA, via certified mail and email to Defendant Zeldin and Elissa Reaves, Director of the Office of Pollution Prevention and Toxics. The petition set forth facts, including those in paragraphs 1-94, establishing that refinery use of hydrogen fluoride presents an unreasonable risk of injury to health and the environment. It asked EPA to "promptly begin a TSCA Section 6(a) rulemaking to ban refinery-related HF use and eliminate the grave and unreasonable risks it presents to public health and the environment."

96. On March 10, 2025, EPA emailed Plaintiffs' counsel to acknowledge receipt of the petition.

97. EPA did not solicit further information from Plaintiffs in response to the petition.

98. EPA denied the petition in a letter signed by Defendant Beck and emailed to Plaintiffs' counsel on May 12, 2025.

99. EPA did not dispute that HF and hydrofluoric acid are "chemical substances" within the meaning of TSCA.

100. EPA did not dispute that the "use of HF for alkylation at U.S. refineries, and the rail and truck transportation needed to supply HF to those refineries," are "condition(s) of use."

101. EPA did not dispute that the "potentially . . . susceptible subpopulations" most endangered by refinery use of HF include infants and children, people over 65, and people with preexisting heart and lung conditions.

102. EPA did not dispute that the "potentially exposed . . . subpopulations" most endangered by refinery use of HF include people who live or work close enough to refineries, or transportation corridors serving those refineries, to be exposed to harmful HF levels in a release.

103. EPA's denial letter takes the "position" that Section 6 of TSCA does not require the agency to "consider catastrophic or accidental releases, extreme weather events, and natural disasters that do not lead to regular and predictable exposures."

CLAIMS FOR RELIEF

I. Refinery use of hydrogen fluoride presents an unreasonable risk to health, and TSCA requires EPA to eliminate that risk through rulemaking

104. Plaintiffs incorporate the allegations in paragraphs 1-103.

105. Hydrogen fluoride is a "chemical substance" for purposes of TSCA. 15 U.S.C. § 2602(2)(A).

106. Refinery use of HF—including the storage and use of HF at refineries, and the movement of HF to refineries by truck and railcar—represents one or more of HF's "conditions of use." *Id.* § 2602(4).

107. The "potentially . . . susceptible subpopulation[s]," *id.* § 2602(12), most endangered by ongoing refinery use of HF include infants and children, people over 65, and people with preexisting heart and lung conditions.

108. The "potentially exposed . . . subpopulation[s]," *id.*, most endangered by ongoing refinery use of HF include people who live or work close enough to refineries, or transportation corridors serving those refineries, to be exposed to harmful HF levels in a release.

109. Refinery use of HF presents an unreasonable risk of injury to human health, including an unreasonable risk to potentially exposed or susceptible subpopulations. TSCA requires EPA to initiate a Section 6(a) rulemaking to eliminate that unreasonable risk. *Id.* § 2605(a).

II. Refinery use of hydrogen fluoride presents an unreasonable risk to the environment, and TSCA requires EPA to eliminate that risk through rulemaking

110. Plaintiffs incorporate the allegations in paragraphs 1-109.

111. Refinery use of HF presents an unreasonable risk of injury to the environment. TSCA requires EPA to initiate a Section 6(a) rulemaking to eliminate that unreasonable risk. *Id.* § 2605(a).

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PRAYER FOR RELIEF

112. Plaintiffs respectfully request that this Court:

A. Declare that refinery use of hydrogen fluoride presents unreasonable risks of injury to public health and the environment under TSCA, and that TSCA requires EPA to eliminate this risk through regulation;

B. Order EPA to promptly commence a Section 6(a) risk-management rulemaking to eliminate those unreasonable risks; to publish a proposed rule within 1 year of the court's ruling; and to publish a final rule within 2 years of the court's ruling;

C. Award Plaintiffs their reasonable costs and attorneys' fees, as appropriate, *id.* § 2620(b)(4)(C); and

D. Grant such other and further relief as the Court deems just and proper.

Date: July 8, 2025

Respectfully submitted,

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