
Air Toxins and Health Risk in Virginia

Insights from the 2019 Toxic Release Inventory and
Risk Environmental Screening Indicator Scores



SIERRA CLUB
VIRGINIA CHAPTER

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Executive Summary

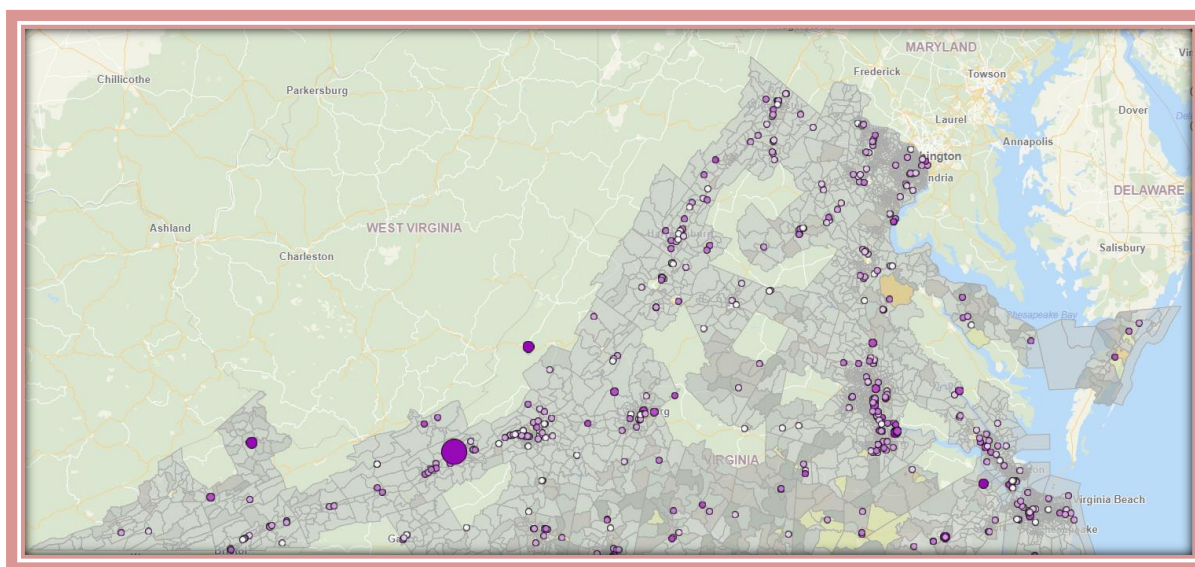
The Sierra Club Virginia Chapter is committed to ensuring the public understands how pollution may be impacting their health. This report synthesizes data from two databases released by the Environmental Protection Agency detailing chemical releases in 2019 – the Toxic Release Inventory (TRI) and its associated Risk-Screening Environmental Indicator (RSEI) scores. The former is a comprehensive list of total toxic chemicals released by facilities. The latter is an estimated human health risk related to toxic exposure. The data found in this report focuses exclusively on air emissions related to chemical releases from facilities. The data does not include other types of air pollution, such as tailpipe exhaust, meaning that this report does not account for all factors contributing to air quality.

In terms of potential health risks, Virginia ranked 8th out of 56 states and territories with a total RSEI score of 10,993, 849. This report provides profiles of the top ten zip codes with highest risk facilities, as well as profiles of the top twenty-five zip codes with the highest amount of toxic releases from facilities. Our analysis depicts environmental justice concerns, with the vast majority of the highest risk facilities concentrated in communities of color. Nearly all of the facilities that emitted the highest amount of toxic releases in 2019 are also located in zip codes with household incomes below the state average. These findings reaffirm what should now be common knowledge: Black, Indigenous and People of Color and low-income communities are the groups hit hardest by pollution.

Introduction

People have a right to know if they are exposed to pollution that is making them sick. This is the notion behind the Federal Emergency Planning and Community Right-To-Know Act (EPCRA) passed in 1986. Rather than set limits on known toxics, the EPCRA established the Toxic Release Inventory (TRI), a public resource detailing the toxic chemical releases by companies. TRI data can inform the public about what toxins are released into their surrounding environment. **According to the Environmental Protection Agency, Virginia is home to 416 facilities that release TRI designated chemicals¹.** The purpose of our toxics report is to provide Virginians with information about what toxic air pollutants are released in their communities.

Figure 1: Map of TRI Facilities in Virginia ²



Previous versions of this toxics report focused solely on total air emissions from polluting facilities. New data tools from the EPA enable us to expand our focus so that communities may understand their potential risk for chronic health illness related to toxic exposure. To accomplish this, our toxics report now includes information about Risk-Screening Environmental Indicator scores (RSEI). More information on the significance of RSEI is provided later in our toxics report, but, in short, RSEI is the result of the EPA's analysis about how extended toxic exposure in a given area may result in chronic illness.

¹ EPA, 2020 TRI Factsheet: State - Virginia
(https://enviro.epa.gov/triexplorer/tri_factsheet.factsheet_forstate?pstate=va&pyear=2020&pParent=TRI&pDataSet=TRIQ1)

² Map generated with EPA's Toxics Tracker Tool
(<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html#>)

Air Toxins and Health Risks

This toxics report is necessary for several reasons. One reason is that DEQ's 2019 Virginia Toxics Release Inventory Report is woefully inadequate. As the DEQ report itself states:

The TRI Report contains reported information on the quantities of chemicals released and managed, not the public's exposure to, or risk from, the chemicals. Due to the limited nature of TRI data collected, readers are strongly discouraged from making any health or environmental risk/exposure assessments from the information presented. Risk to human health by a chemical release depends on the toxicity of the chemical; how it disperses, reacts, or persists in the environment; and the quantity, concentration, and type of human exposure. Furthermore, chemicals reported for the TRI Report are not weighted by their toxicity. For example, a pound of one substance may be more toxic or hazardous than 1,000 pounds of another. Most of the releases are permitted under other federal and state regulatory programs such as the CAA, CWA and RCRA.

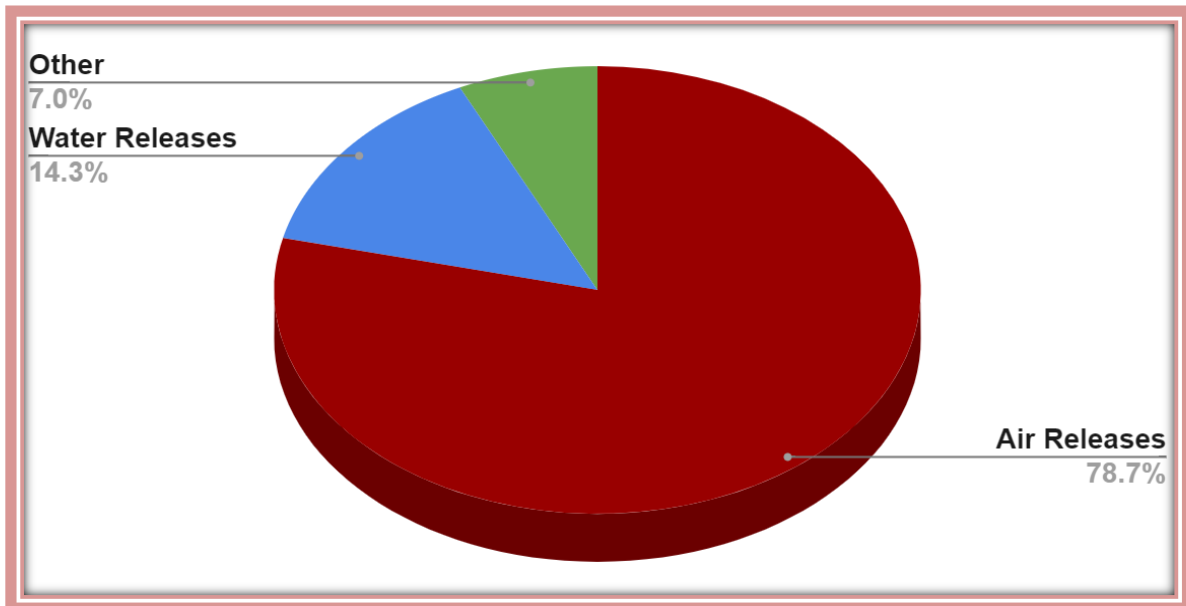
Our toxics report includes RSEI scores in order to account for where DEQ's report fell short. Another reason a more detailed report on toxins is necessary is that DEQ's report fails to provide information related to environmental justice (in fact, the phrase is never used). Our report provides the necessary demographic and income data for Virginia residents to better understand who bears the brunt of pollution exposure and risks. Finally, accountability is possible when the public is informed. Our toxics report highlights free, accessible, online tools that can empower people to better understand how their lives may be impacted by toxic facilities.

About the Data

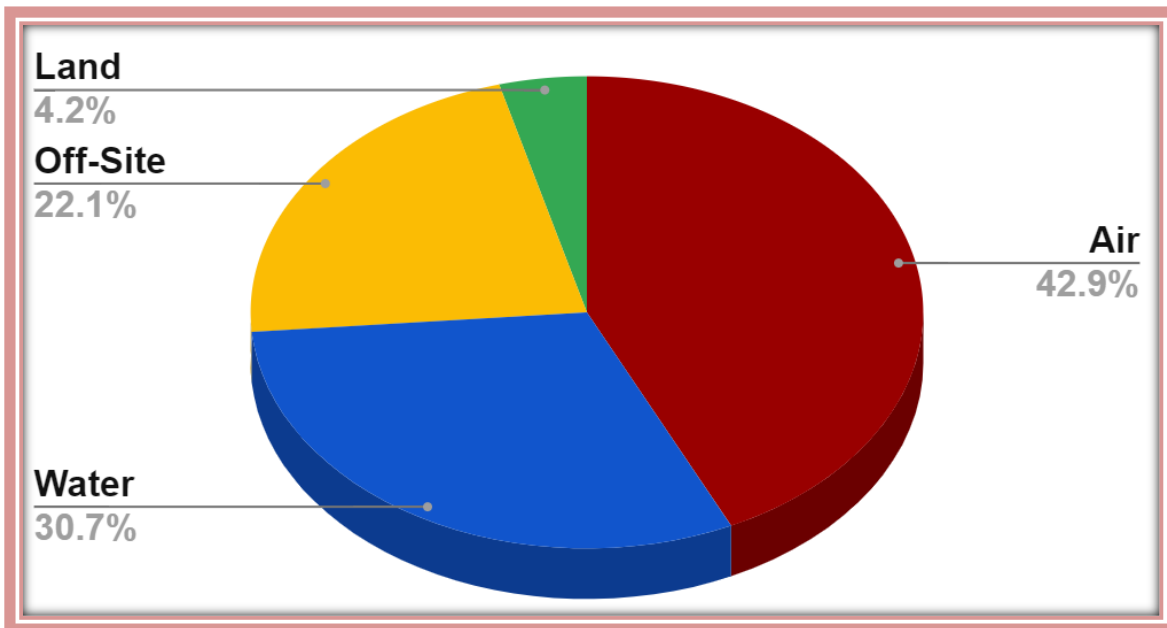
The Toxics Release Inventory provides a comprehensive picture of how toxins are released into the air, water, and environment. The TRI and RSEI information found in our report accounts for toxins released into the air in 2019. Graphs 1 and 2 depict how air emissions make up the vast majority of Virginia's RSEI score as well as a plurality of TRI releases in Virginia. Not only does the public have a right to know if toxins may be impacting the air quality of their communities, they also deserve to know what kind and how much. We have organized the TRI data and RSEI scores to show what areas (zip codes) may be overburdened by toxic releases and face the greatest risk of potential illness.

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Graph 1: Percent of Virginia's Total RSEI Scores by Type of Release ³



Graph 2: Total TRI Releases by Type in 2019 ⁴



³ Graph created with Google sheets, data captured from EPA's EasyRSEI Dashboard (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

⁴ Graph created with Google sheets, data captured from EPA's Toxic Tracker Tool (<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.htm>)

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As of the time of writing this, the EPA has released 2020 TRI information, but has yet to release 2020 RSEI scores. Therefore, the decision was made to release our toxics report in two parts, with part one focusing on 2019 data. Part 2 of this report will be released in mid-2022 and include updated data and comparative analysis that demonstrate trends.

It is important to note that TRI data is helpful in understanding toxic releases, but it is also flawed. Information regarding the amount of toxic chemicals released is based on self-reported data from the companies who operate TRI facilities. What the public knows about toxic releases is based on modeling from self-reported data, not data extracted from air monitors that measure actual levels of pollution.

Self-reporting flaws notwithstanding, the EPA has come a long way in ensuring the public can access toxics information. New online digital tools have simplified the process to find information as well as identify the worst actors. Figure 2 depicts the EPA's TRI Toxics Tracker, a tool that enables users to easily sort information related to toxic releases in geographical areas. Figure 3 depicts the EasyRSEI Dashboard, a tool to better understand how toxics releases may increase the likelihood of chronic illness. Both tools allow users to create custom tables based on specific search criteria. The data found in our report focused on finding out what facilities were (1) posing the most potential risk to communities, (2) were releasing the highest amounts of toxic chemicals into our air.

Understanding toxic emissions and potential risk is not enough. Environmental justice advocates have long recognized that communities of color shoulder a disproportionate burden of pollution. This data adds to an ever-growing body of evidence that toxic exposure and associated health impacts are felt hardest by these communities. Figure 4 depicts Census Reporter, the tool we used to gain demographic information about the population, median household income, and racial demographics of zip codes⁵ that are home to Virginia's most toxic facilities. Census Reporter is "an independent project to make it easier for journalists to write stories using information from the U.S. Census bureau. Place profiles and comparison pages provide a friendly interface for navigating data, including visualizations for a more useful first look."⁶ Census Reporter has been endorsed by the U.S. Census Bureau as a "data gem" due to its user-friendly interface that helps people access information from the American Community Survey data⁷.

⁵ Zip codes are observed through "ZIP Code Tabulation Areas," a "generalized areal representations of United States Postal Service (USPS) ZIP Code service areas", United States Census Bureau (<https://www.census.gov/programs-surveys/geography/guidance/geo-areas/zctas.html>).

⁶ Census Reporter, Homepage (<https://censusreporter.org>)

⁷ U.S. Census Bureau, DATA GEM: How to Access American Community Survey Data Using Census Reporter, 2021 (<https://www.census.gov/data/academy/data-gems/2021/how-to-access-acs-data-using-census-reporter.html>)

Figure 2. TRI Toxics Tracker Tool⁸

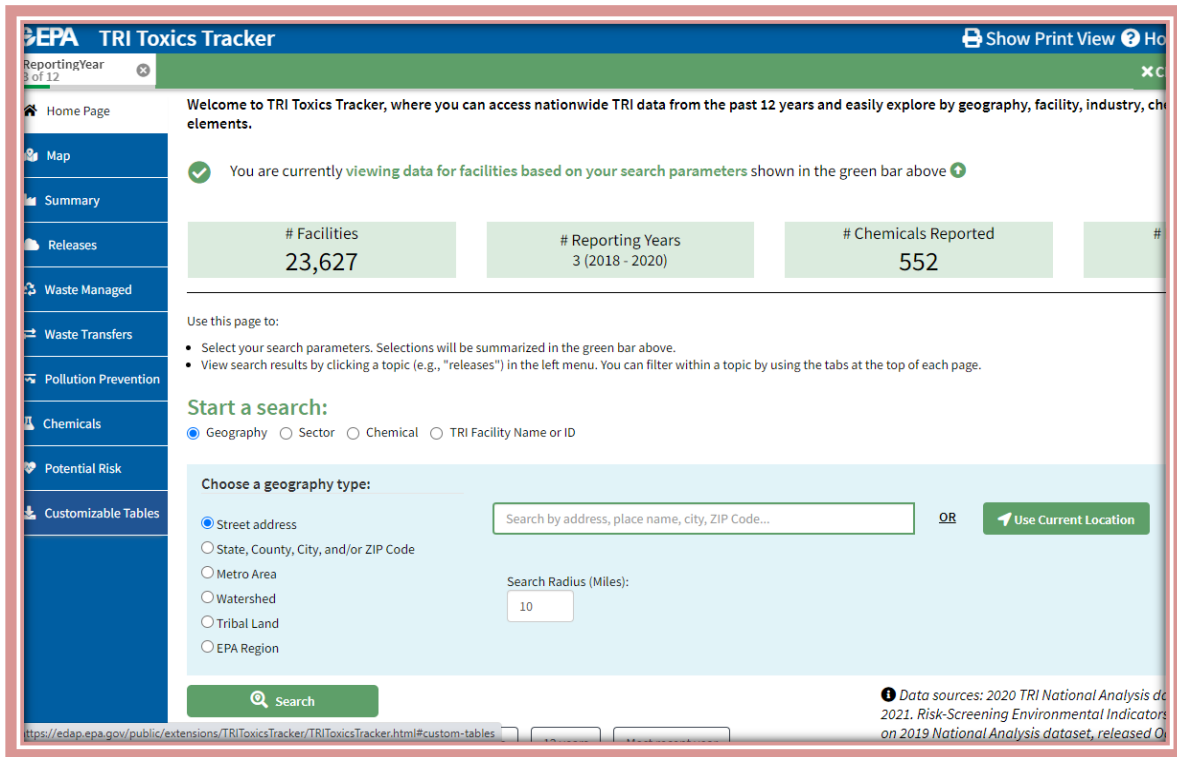
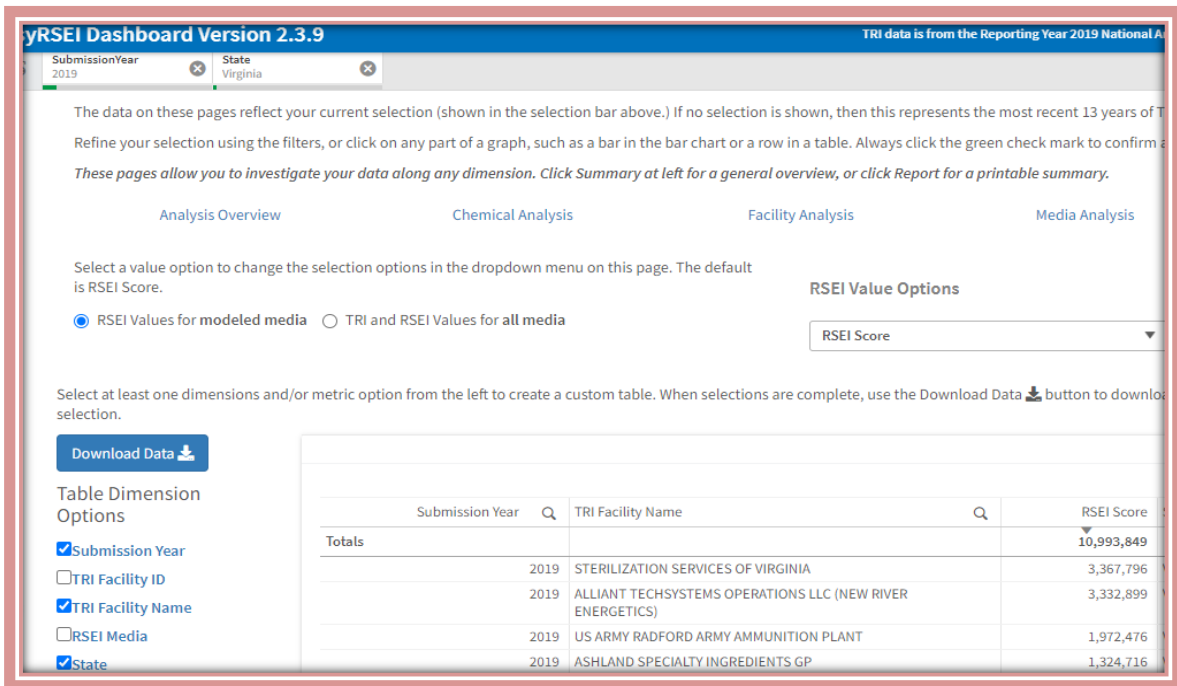


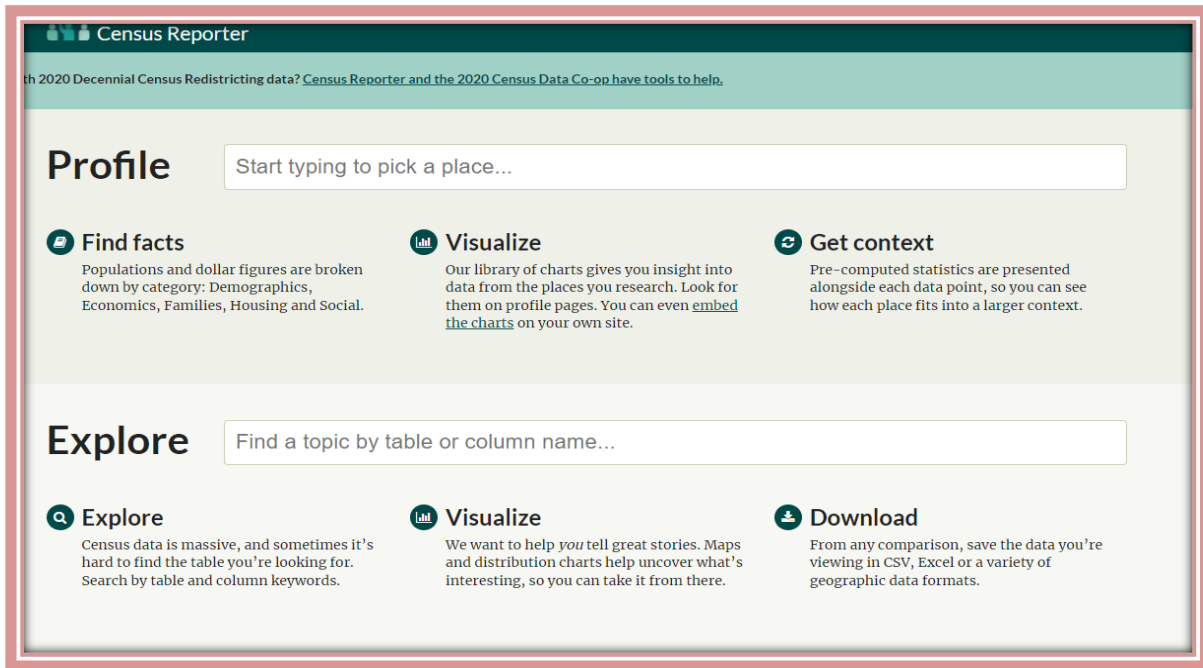
Figure 3. EasyRSEI Dashboard⁹



⁸ <https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>

⁹ Easy RSEI Dashboard (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html>)

Figure 4. Census Reporter ¹⁰



Understanding Risk-Screening Environmental Indicators (RSEI) Scores

Prior versions of our report did not include information about RSEI scores due to lack of data and research tools from the EPA. While the Toxic Release Inventory is helpful in understanding the total releases of toxins by a facility, the EPA's RSEI score provides context regarding exposure and health risk. The RSEI score is calculated through an analysis that includes the amount of toxins released in a given area, the level of toxicity of the chemicals, and the potential risk of chronic health illness from human exposure. In short, RSEI provides a picture of the potential for chronic health risks in people living near toxic facilities.

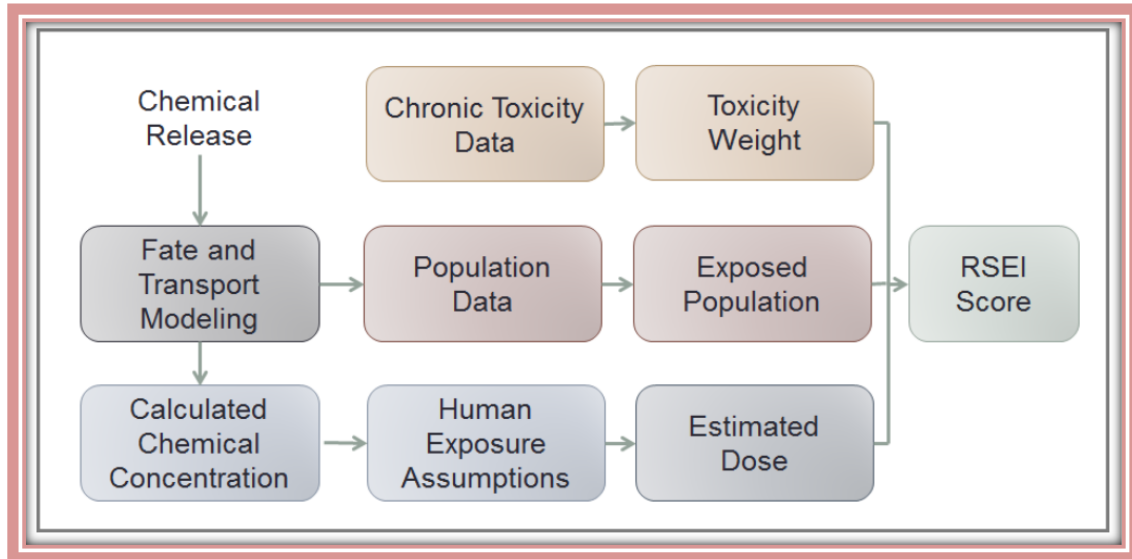
It is important to note that RSEI is a score of comparison. As the EPA describes, "A RSEI Score 10 times higher than another RSEI Score suggests that the potential for risk is 10 times higher. Relatively small chemical releases may lead to high RSEI Scores if the toxicity weight is particularly high or if the modeled exposed population is large.¹¹" A high RSEI score may not be accompanied by a large amount of TRI releases if the released chemicals possess high toxicity levels and/or a large amount of the population is exposed.

¹⁰ Census Reporter, homepage (censusreporter.org)

¹¹ Understanding RSEI Results, EPA (<https://www.epa.gov/rsei/understanding-rsei-results>)

❖ *How the EPA Calculates RSEI*

*Figure 4: RSEI Analysis Factors*¹²



According to the EPA, RSEI is designed to “represent a worst-case scenario.”¹³ Our toxics report presents the RSEI scores as listed by the EPA. The RSEI scores and affiliated facilities have been organized to show which areas are potentially the most impacted by air toxins. It’s important to note that RSEI scores are partly defined through TRI data, information that is provided to the EPA by facilities that release toxic chemicals. The Sierra Club Virginia Chapter is not presenting a new analysis with information found in our toxics report. Instead, we are simply presenting the information in an organized fashion so that Virginians are equipped with knowledge of facilities that may pose chronic health risks to their communities. More information on RSEI can be found on the [EPA’s RSEI website](#).

❖ *In terms of potential risk to human health, Virginia was ranked the 8th most toxic state in the nation in 2019.*

According to the EPA, Virginia’s RSEI score in 2019 was **10,993, 849** – this is the 8th highest score out of 56 states and territories.¹⁴ Since RSEI is a score by comparison, it should be noted that the total score in the lowest RSEI scoring state, Vermont, is only **333**. In other words, the risk of chronic illness from toxic exposure in Virginia is more than

¹² Understanding RSEI Results, EPA (<https://www.epa.gov/rsei/understanding-rsei-results>)

¹³ How RSEI Should Be Used, EPA (<https://www.epa.gov/rsei/how-rsei-should-be-used>)

¹⁴ RSEI Results Map, EPA (<https://www.epa.gov/rsei/rsei-results-map>)

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33,000 times greater than Vermont. Yet, the Virginia DEQ's 2019 report did not include any information about Virginia's RSEI scores.

❖ Air emissions make up the majority of Virginia's total RSEI Score

- ***Total score = 10,993, 849¹⁵***
- ***RSEI Score excluding non-air releases = 8,656,760¹⁶***

The information presented in our toxics report reflects RSEI scores and annual toxic releases specific to air emissions in 2019. Air pollution remains the predominant culprit behind Virginia's toxic exposure. If all other chemical releases (water and land) are excluded, Virginia's RSEI ranking would only fall three spots in the national list, making Virginia the 11th riskiest state.

The air pollution RSEI score should be a red flag for decision-makers and state oversight agencies. For too long, polluting industries have convinced state lawmakers and public officials that toxins from their facilities do not pose serious risk to communities. Virginia's RSEI score tells a different story. Although RSEI scores only represent "potential" risk, state and local leaders should strive to reduce pollution from current levels and achieve a lower national ranking. As of the time of this writing, DEQ does not include RSEI scores as a metric when determining the status of Virginia's environment or communities. Not only should DEQ be more transparent about RSEI scores of Virginia's localities, DEQ should take RSEI scores into consideration when determining the siting and permitting of polluting facilities.

RSEI Score Categories

The EPA breaks down RSEI scores into two categories: Cancer and Non-cancer¹⁷. In regards to air pollution, the cancer score relates to the potential for populations to breathe chemicals with carcinogenic effects. Non-cancer scoring is determined by chemicals that pose a health hazard but are unlikely to expose the population to carcinogens. Both scores consider the toxicity weight of the chemical and number of potentially exposed people. The higher the score, the higher the level of toxicity and/or amount of exposed population.

❖ Virginia's Total RSEI Cancer Score by Air Pollution = 5,321,889 (61.47 percent of RSEI score derived from air emissions)

¹⁵ RSEI Results Map, EPA (<https://www.epa.gov/rsei/rsei-results-map>)

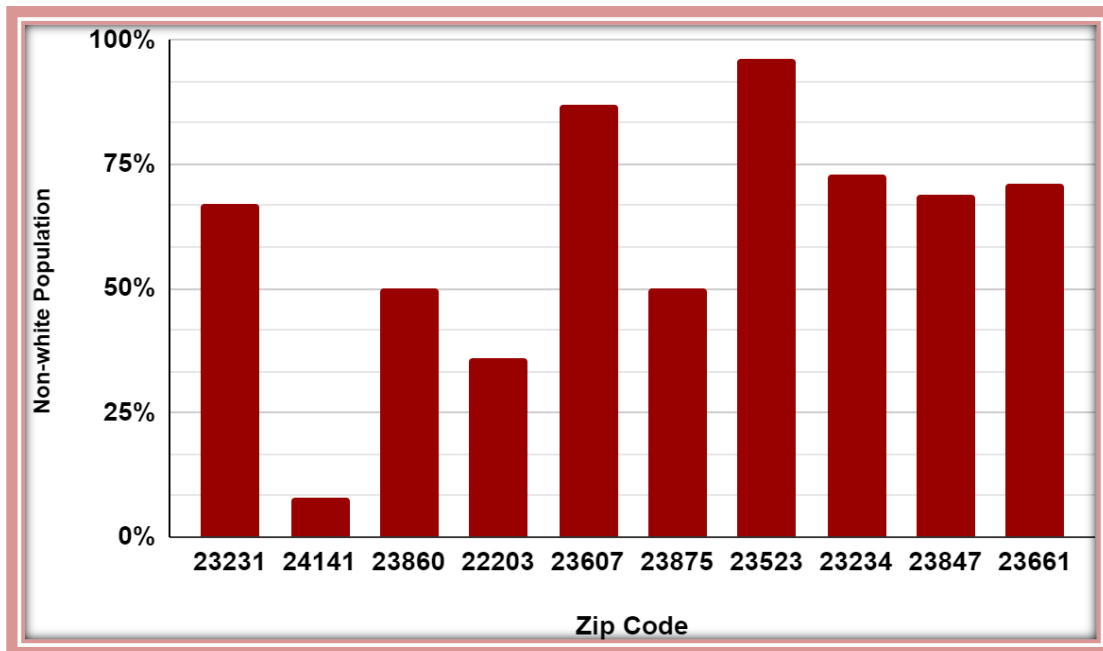
¹⁶ EPA's Easy RSEI Dashboard (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

¹⁷ RSEI Results and Definitions, EPA Website (<https://www.epa.gov/rsei/rsei-results-definitions>)

Environmental Racism

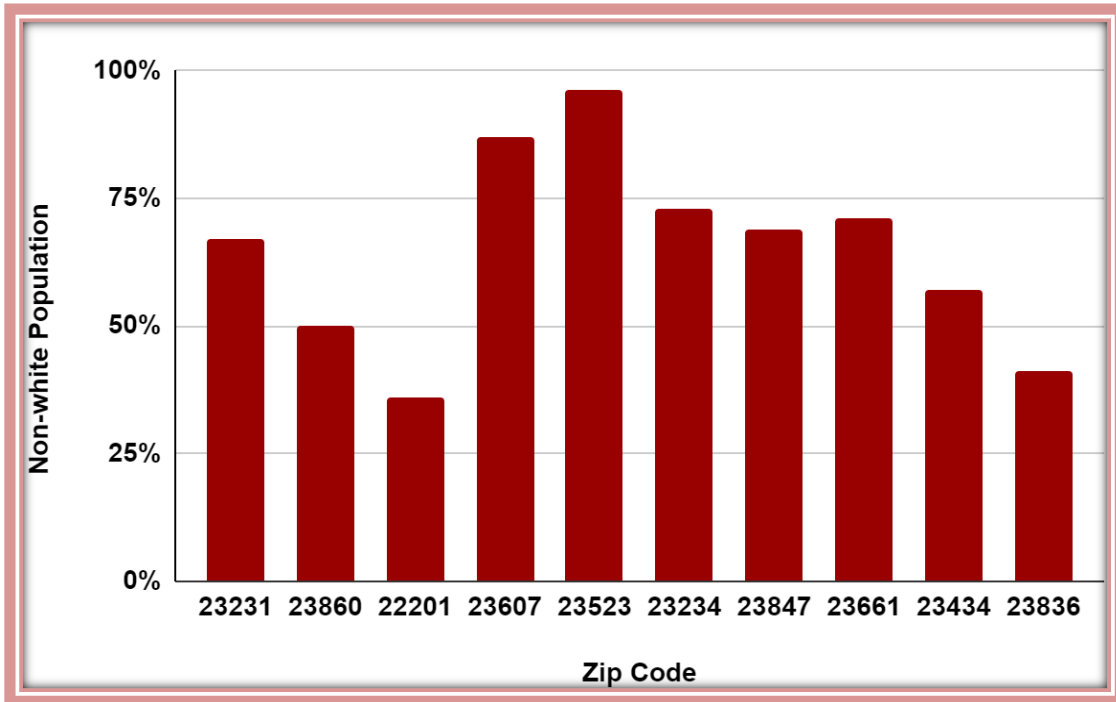
Racism is built into our environmental system. Countless studies have confirmed that communities of color shoulder a far heavier burden of pollution than their white counterparts. Toxic facilities play one role in the larger systemic issues perpetuating harm against marginalized and underrepresented groups. People of color represent almost half of those living near toxic facilities (fenceline zones) in the United States, and children of color make up nearly two-thirds of children who live within a mile of dangerous chemical facilities.¹⁸ A similar picture of injustice is reflected in Virginia. Graphs 3-4 depict how the highest risk scores are concentrated in non-white communities. When accounting for racial demographics in the zip codes with the top ten RSEI scores, eight out of ten zip codes encompass populations with a 50 percent or higher non-white population (Graph 3). When narrowing the focus to cancer risk (graph 4), eight of ten zip codes hold 50 percent or higher non-white populations, with seven out of ten being majority non-white. The disproportionate impact of pollution on People of Color is not new, nor is it an accident. Virginia's state leadership is simply not doing enough to prevent environmental racism.

Graph 3: Non-white population of Top 10 RSEI Scoring Zip Codes



¹⁸ Living in the Shadow of Danger, 2016 (<https://www.foreffectivegov.org/sites/default/files/shadow-of-danger-highrespdf.pdf>)

Graph 4: Top 10 RSEI Cancer Scoring Zip Codes by Non-White Population



It must be noted that, historically, zoning ordinances such as redlining were tools used to segregate, which prevented people of color from moving to areas with less pollution, better schools and other opportunities and privileges. The legacy of this racist practice has created economic stagnation in non-white families that were unable able to use their houses as transferable wealth to younger generations.¹⁹ Discriminatory housing and zoning practices also increased the health risk to families by concentrating and targeting extremely polluted areas, creating a low life expectancy as well as chronic health problems. The cycle of health and wealth disparity continues to impact many peoples' ability and availability to work (performance) as well as achieve their academic success – resulting in a perpetual low-income class.²⁰

Economic Class Impacts

The balance of power in determining where toxic facilities may be sited should tilt towards mitigating harmful effects on communities and away from corporate interests. In Virginia, it is often the other way around. In order to improve in this area, decision-makers should

¹⁹ "The Color of Law" by Richard Rothstein, 2017

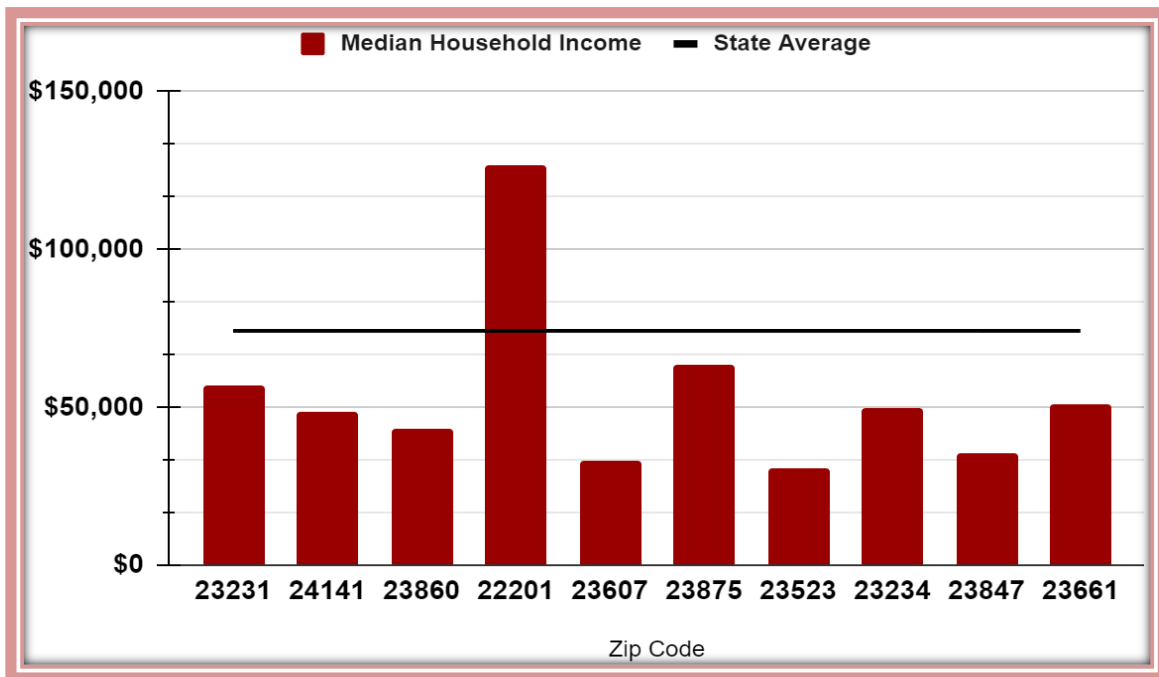
²⁰ "Toxic Communities" by Dorceta Taylor, 2014

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strive to understand environmental justice²¹ implications of Virginia's toxic releases before approving new polluting facilities. Beyond the racial demographics described above, our report seeks to highlight the economic realities of those most exposed to toxic releases. Graph 4 and 5 depict the median household income of the zip codes with the highest RSEI score as well as the total amount of toxic air releases.

Stakeholders involved in promoting polluting facilities have long relied on the promise of economic gains to justify building more toxic infrastructure. Putting aside the fact that communities should not have to choose between economic opportunity and living in polluted areas, the demographic data in our toxics report shows little economic benefit to fenceline communities. Graphs 5, 6, and 7 depict how the median household income of nearly all of the most toxic zip codes in Virginia fall below the state average.

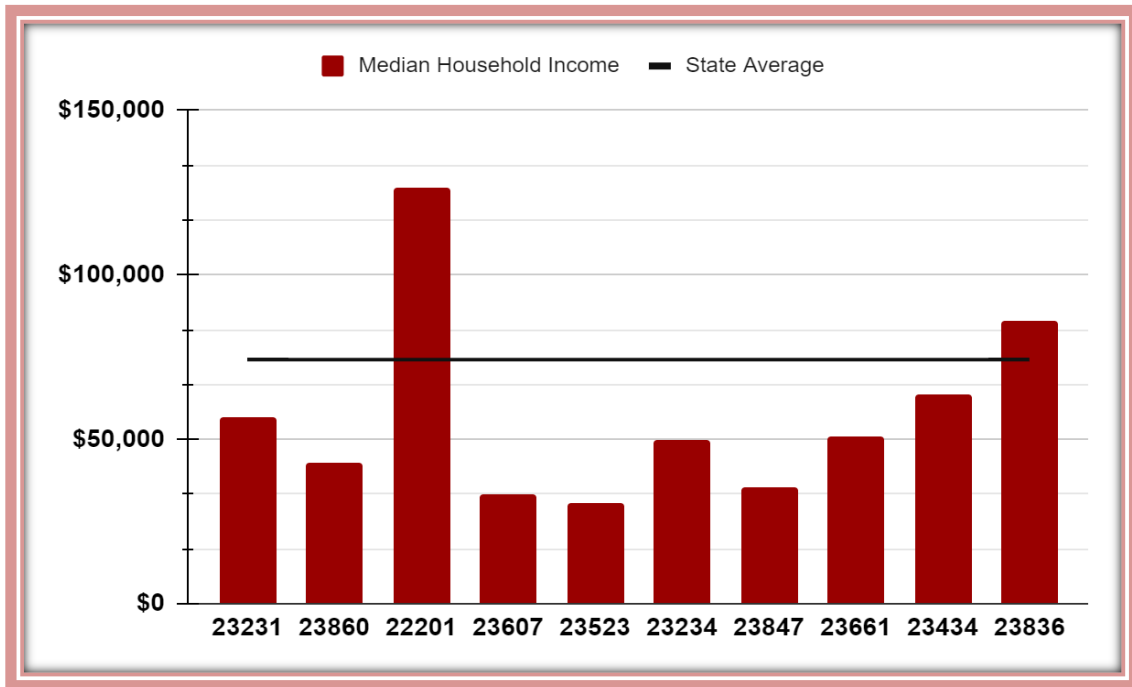
Graph 5: Top RSEI Scoring Zip codes and Median Household Income²²



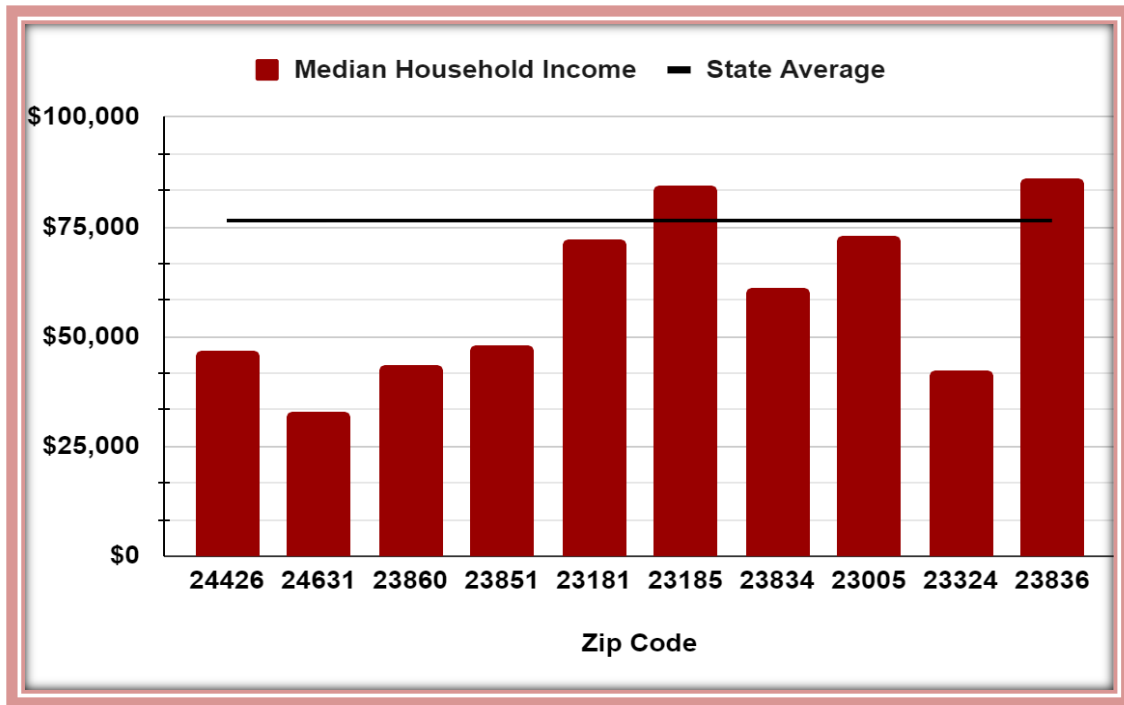
²¹ The EPA Defines Environmental Justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. (<https://www.epa.gov/environmentaljustice>)

²² Graph created with google sheets filled with data captured from Census Reporter (<https://censusreporter.org/profiles>)

Graph 6: Top Scoring RSEI Cancer Zip codes and Median Household Income²³



Graph 7: Top 10 Most Toxic Zip Codes (by Total Air Emissions) and Median Household Income



²³ Graph created with google sheets filled with data captured from Census Reporter (<https://censusreporter.org/profiles>)

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Virginia has made some strides in improving environmental justice. Prior to the passage of [Virginia's Environmental Justice Act of 2020](#), DEQ's permitting process for toxic facilities prioritized expediency of approval for dirty projects while excluding community input. The EJ Act empowers communities by providing them with more information about potential toxic infrastructure as well as more opportunities to provide public input during permitting deliberations. Empowering communities is a step in the right direction, but improving environmental justice in the commonwealth requires stronger enforcement of existing policies and stronger state oversight of toxic facilities.

It is also worth noting that recent changes in Virginia's executive branch and legislature are endangering existing environmental protections. The 2022 General Assembly Session has seen a multitude of legislation that could undermine or eliminate existing safeguards. Governor Youngkin and his administration are currently working to pull Virginia out of the Regional Greenhouse Gas Initiative and repeal the Virginia Clean Economy Act, two policies that set limits on air pollution in the energy sector. Recent attempts to take Virginia backwards underscores the need for greater access to information on environmental exposures to toxins and pollution so that grassroots advocates and the public can be active participants in the environmental policy making process and in protecting their communities.

Potential Health Impacts

Chemicals in the TRI would not be listed unless they are known to have adverse effects. According to the EPA, TRI chemicals are known to cause "cancer or other chronic human health effects," "significant adverse acute human health effects," or "significant adverse environmental effects."²⁴ At present, there are 774 chemicals listed in the TRI and 33 chemical categories.

Graph 6 displays the most released chemicals by total air emissions. **2019 saw the release of 15,120,144 lbs. of toxic chemicals from facilities.** The air releases reported here encompass stack air emissions (emissions from regular operations of facilities) and fugitive air emissions (leaks from valves, pumps, seals, compressors, etc.) While this data is a good start to understanding what chemicals are in our environment, it is not a comprehensive depiction of Virginia's total air pollution. For example, The TRI dataset does not include emissions from the transportation sector (tailpipe pollution). There is value in

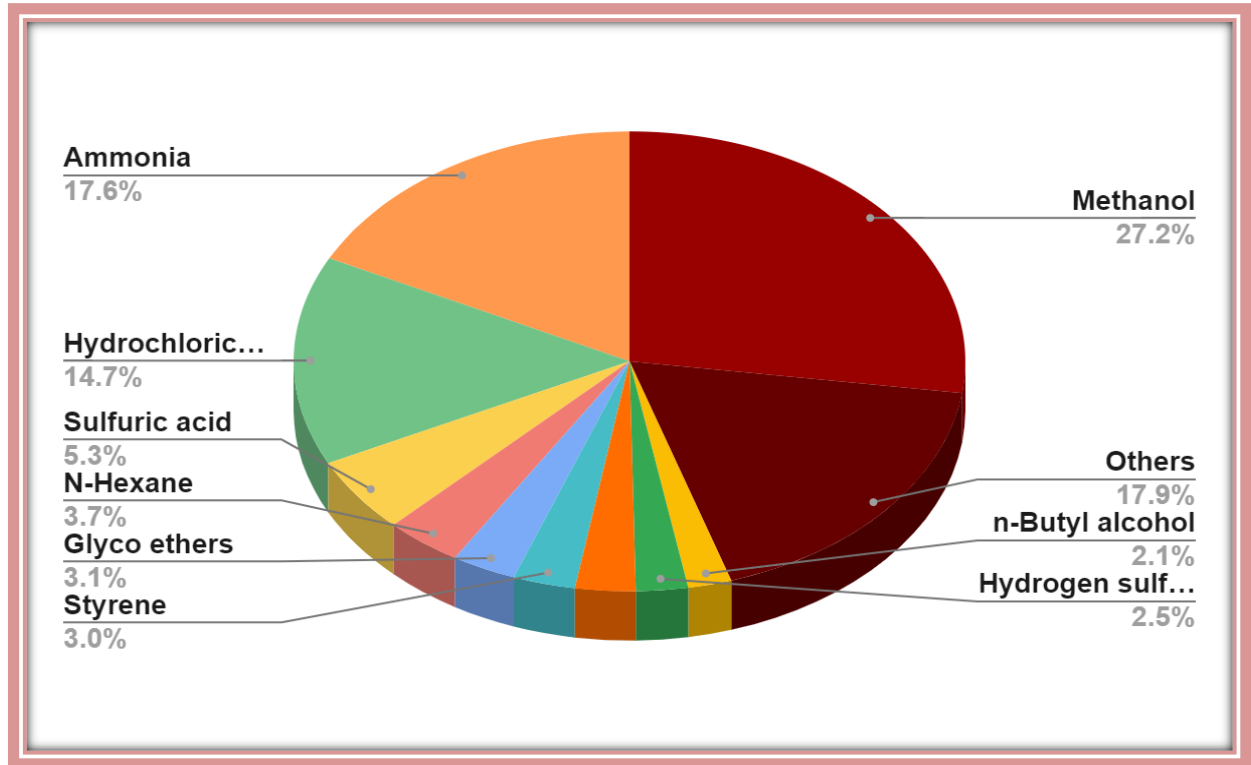
²⁴ EPA, TRI-Listed Chemicals, (<https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals>)

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understanding total TRI emissions, but it is important to note that Virginia's air pollution levels are much higher than what is displayed in our toxics report.

Graph 6: 2019 Air Emissions by Chemical²⁵

Total Air Emissions = 15,120,144 Lbs.

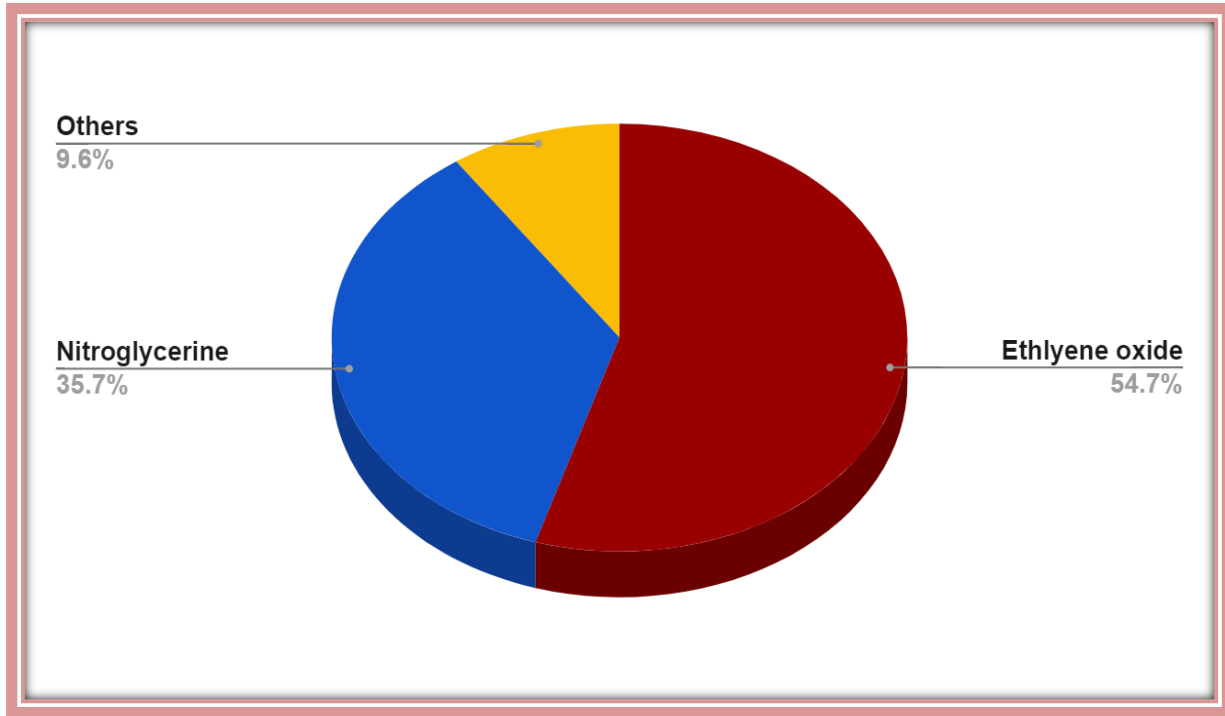


While our toxics report provides the public with an understanding of what chemicals are released into our communities, it does not provide the full context of the toxics effect on our health and environment. State regulators and the pollution industry frequently rely on one argument: it is not possible to attribute sickness to chemical exposure alone as there are a variety of factors that lead to illness. This is technically true, and so is the fact that many of the chemicals released into our environment have yet to undergo rigorous studies and comprehensive impacts are not yet known. However, this argument discounts the reality that increased exposure to toxic chemicals directly correlates to increased risk of certain illnesses. The public has a right to know if they are living in an area where the risk of illness is higher due to their proximity to chemical releasing facilities.

²⁵ Graph Created with EPA's Toxic Tracker Tool
(<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>)

❖ **Case in Point: Ethylene Oxide**

Graph 5: Top RSEI Scoring Chemicals in 2019 ²⁶



RSEI scores reflect the potential for the population to develop chronic illness from toxic exposure. As seen in graph 5, ethylene oxide represents more than 50 percent of Virginia’s score. Ethylene Oxide is an odorless, colorless chemical largely used in the United States to sterilize medical equipment. The chemical was added to the EPA’s carcinogen list in 2016²⁷ with an assessment warning that ethylene oxide “was 30 times more carcinogenic to people who continuously inhale it as adults and 50 times more carcinogenic to those who are exposed since birth than the agency previously thought.”²⁸ The chemical has recently gained more national attention for its link to cancer, especially in children.²⁹ An analysis by [ProPublica](https://www.propublica.org/) found that ethylene oxide is the “biggest contributor to excess

²⁶ Graph created with EPA’s EasyRSEI dashboard

(<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

²⁷ EPA, Frequent Questions: Health Information About Ethylene Oxide (<https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/frequent-questions-health-information-about-ethylene-oxide>)

²⁸ “A Plant That Sterilizes Medical Equipment Spews Cancer-Causing Pollution on Tens of Thousands of Schoolchildren,” Collier and Miller, ProPublica, 2021 (<https://www.propublica.org/article/a-plant-that-sterilizes-medical-equipment-spews-cancer-causing-pollution-on-tens-of-thousands-of-schoolchildren>)

²⁹ NPR, *When the Air You Breathe Is Toxic*, 2022 (<https://www.npr.org/2022/01/20/1074376796/when-the-air-you-breathe-is-toxic>)

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industrial cancer risk from air pollutants nationwide,³⁰ and a report from the West Virginia State Health Department detailed a link between ethylene oxide emissions and a rise in cancer in the towns of South Charleston and Institute.³¹

³⁰ Younes et al. *Poison in the Air*, ProPublica, 2021 (<https://www.propublica.org/article/toxmap-poison-in-the-air>)

³¹ NPR, *When the Air You Breathe Is Toxic*, 2022 (<https://www.npr.org/2022/01/20/1074376796/when-the-air-you-breathe-is-toxic>)



Top 10 Toxic Zip Codes By Risk Scores

Naming Names: RSEI Scores

Three facilities are responsible for the vast majority of Virginia’s high RSEI score. More disturbingly, two facilities – Virginia Sterilization Services and Ashland Specialty Ingredients G.P. – represent nearly 90 percent of the potential cancer risk. Virginia Sterilization services alone represents a score of 3,367,796 (10,000 times the potential risk of the entire state of Vermont). Information on the top 25 RSEI score facilities is found in Table 1 and 2.

Table 1: Top 25 RSEI Scoring Facilities in 2019³²

Rank	Facility	Location	RSEI Score
1	STERILIZATION SERVICES OF VIRGINIA	5674 EASTPORT BLVD RICHMOND	3,367,796
2	ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	RT 114 RADFORD ARMY AMMUNITION PLANT RADFORD	2,602,464
3	ASHLAND SPECIALTY INGREDIENTS GP	1111 HERCULES RD HOPEWELL	1,324,603
4	US ARMY RADFORD ARMY AMMUNITION PLANT	RT 114 RADFORD ARMY AMMUNITION PLANT RADFORD	486,281
5	PENTAGON RESERVATION	1 NORTH ROTARY ROAD, ARLINGTON	156,376
6	HUNTINGTON INGALLS INC	4101 WASHINGTON AVE NEWPORT NEWS	141,703

³² Data derived from EasyRSEI Dashboard on EPA’s website (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

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7	METL-SPAN A DIV OF NCI GROUP INC	6001 QUALITY WAY PRINCE GEORGE	135,705
8	BAE SYSTEMS NORFOLK SHIP REPAIR	750 W BERKLEY AVE NORFOLK	71,843
9	CARPENTER CO RICHMOND PLANT	2400 JEFFERSON DAVIS HWY RICHMOND	51,472
10	EVONIK INDUSTRIES	914 E RANDOLPH RD HOPEWELL	48,737
11	STEELFAB OF VIRGINIA INC	1510 REESE ST EMPORIA	48,737
12	HOWMET CASTINGS & SERVICES INC	ONE HOWMET DR HAMPTON	26,202
13	ADVANSIX INC HOPEWELL PLANT	905 E RANDOLPH RD HOPEWELL	26,161
14	SPRUANCE PLANT	5401 JEFFERSON DAVIS HWY NORTH CHESTERFIELD	24,897
15	SOLENIS LLC	2301 WILROY RD SUFFOLK	22,070
16	DUPONT TEIJIN FILMS	3600 DISCOVERY DR CHESTER	21,324
17	DRIV	3160 ABBOTT LN HARRISONBURG	9,664

Air Toxins and Health Risks

18	HUBER ENGINEERED WOODS LLC	1000 CHANEY LN CRYSTAL HILL	9,045
19	MENZIES AVIATION FUELING OPERATIONS	TANK FARM RD BUILDING 2 STERLING	7,804
20	INTERNATIONAL PAPER FRANKLIN MILL	34040 UNION CAMP DR FRANKLIN	7,223
21	CHESTERFIELD POWER STATION	500 COXENDALE RD CHESTER	6,018
22	SLOCUM ADHESIVES CORP	1409 BUCHANAN ST LYNCHBURG	5,151
23	AMERICAN PHOENIX INC	121 MARTHA ST DANVILLE	4,860
24	CITGO FAIRFAX TERMINAL	9600 COLONIAL AVE FAIRFAX	4,356
25	ALLIED AVIATION FUELING CO INC	RONALD REAGAN NATIONAL AIRPORT ARLINGTON	3,973

Table 2: Top 25 RSEI Cancer Scoring Facilities of 2019 ³³

Rank	Facility	Location	RSEI Score-Cancer
1	STERILIZATION SERVICES OF VIRGINIA	5674 EASTPORT BLVD RICHMOND	3,367,796
2	ASHLAND SPECIALTY INGREDIENTS GP	1111 HERCULES RD HOPEWELL	1,324,337
3	PENTAGON RESERVATION	2 N ROTARY RD ARLINGTON	143,706
4	HUNTINGTON INGALLS INC	4101 WASHINGTON AVE NEWPORT NEWS	140,081
5	BAE SYSTEMS NORFOLK SHIP REPAIR	750 W BERKLEY AVE NORFOLK	71,668
6	EVONIK INDUSTRIES	914 E RANDOLPH RD HOPEWELL	48,578
7	STEELFAB OF VIRGINIA INC	1510 REESE ST EMPORIA	30,461
8	HOWMET CASTINGS & SERVICES INC	ONE HOWMET DR HAMPTON	26,131
9	SPRUANCE PLANT	5401 JEFFERSON DAVIS HWY NORTH CHESTERFIELD	24,775
10	SOLENIS LLC	2301 WILROY RD SUFFOLK	22,046

³³ RSEI scores derived from EPA's online EasyRSEI Dashboard Tool, (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

Air Toxins and Health Risks

11	DUPONT TEIJIN FILMS	3600 DISCOVERY DR CHESTER	21,324
12	ADVANSIX INC HOPEWELL PLANT	905 E RANDOLPH RD HOPEWELL	16,156
13	CARPENTER CO RICHMOND PLANT	2400 JEFFERSON DAVIS HWY RICHMOND	11,577
14	DRIV	3160 ABBOTT LN HARRISONBURG	8,640
15	MENZIES AVIATION FUELING OPERATIONS	TANK FARM RD BUILDING 2 STERLING	7,800
16	SLOCUM ADHESIVES CORP	1409 BUCHANAN ST LYNCHBURG	5,146
17	AMERICAN PHOENIX INC	121 MARTHA ST DANVILLE	4,860
18	CITGO FAIRFAX TERMINAL	9600 COLONIAL AVE FAIRFAX	4,341
19	ALLIED AVIATION FUELING CO INC	RONALD REAGAN NATIONAL AIRPORT ARLINGTON	3,959

Air Toxins and Health Risks

20	STEEL DYNAMICS INC ROANOKE BAR DIV	102 WESTSIDE BLVD ROANOKE	3,405
21	SAMUEL SON & CO (USA) INC	58 SAMUEL WAY LEBANON	3,322
22	INTERNATIONAL PAPER FRANKLIN MILL	34040 UNION CAMP DR FRANKLIN	3,197
23	TREX - VIRGINIA MANUFACTURING OPERATIONS	3229 SHAWNEE DRIVE WINCHESTER	2,608
24	HUBER ENGINEERED WOODS LLC	1000 CHANEY LN CRYSTAL HILL	2,435
25	CHAPARRAL (VA) INC	25801 HOFHEIMER WAY PETERSBURG	1,935

Top 10 Toxic Zip Codes by Risk Scoring Facilities

1. 23231 – Richmond, Henrico Area; STERILIZATION SERVICES OF VIRGINIA

Total RSEI Score: 3,367,796
Population: 36,564
Median Household Income: \$56,872 ³⁴

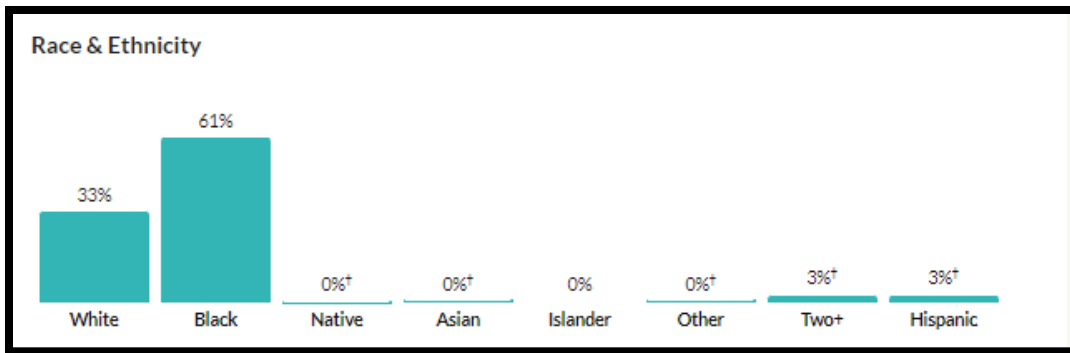


Table 3: 23231 RSEI Scores by Chemical and Facility

Facility	Chemical	RSEI Score	RSEI Cancer
STERILIZATION SERVICES OF VIRGINIA	Ethylene oxide	3,367,796	3,367,796

2. 24141- Radford; ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS), US ARMY RADFORD ARMY AMMUNITION PLANT

Total RSEI Score: 3,088,745
Population: 22,989
Median Household Income: \$48,664

³⁴ According to Census ACS 1-year survey, the median household income for Virginia was \$76,456 in 2019 (<https://www.census.gov/quickfacts/fact/table/VA/AFN120212>)

Air Toxins and Health Risks

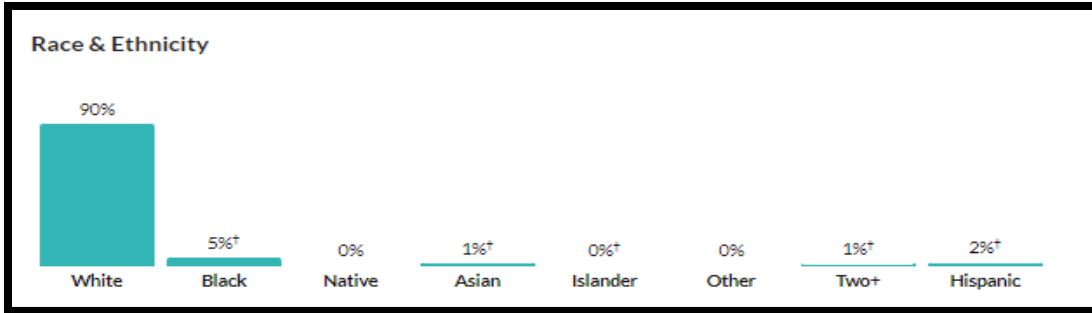


Table 4: 24141 RSEI Scores by Chemical and Facility

Facility	Chemical	RSEI Score	RSEI Cancer
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Nitroglycerin	2,602,460	0
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Lead compounds	4	0
US ARMY RADFORD ARMY AMMUNITION PLANT	Nitroglycerin	485,115	0
US ARMY RADFORD ARMY AMMUNITION PLANT	Lead compounds	1,132	0
US ARMY RADFORD ARMY AMMUNITION PLANT	Copper compounds	22	0
US ARMY RADFORD ARMY AMMUNITION PLANT	Nitric acid	8	0

Air Toxins and Health Risks

US ARMY RADFORD ARMY AMMUNITION PLANT	Ammonia	5	0
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3. 23860* - Hopewell; ASHLAND SPECIALTY INGREDIENTS GP, EVONIK INDUSTRIES, ADVANSIX INC HOPEWELL PLANT, WESTROCK CP LLC

Total RSEI Score: 1,401,310

Population: 30,524

Average Median Household Income: \$42,934

**Ranking reflects consolidation of the multiple RSEI Scoring facilities located in 23860*

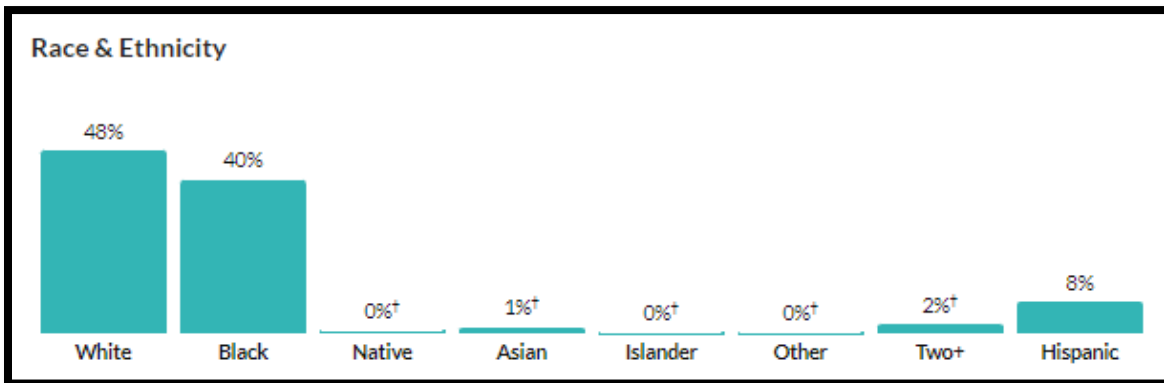


Table 5: 23860 RSEI Scores by Chemical and Facility

Facility	Chemical	RSEI Score	RSEI Cancer
ASHLAND SPECIALTY INGREDIENTS GP	Ethylene oxide	1,320,125	1,320,125
ASHLAND SPECIALTY INGREDIENTS GP	Propylene oxide	4,212	4,212
ASHLAND SPECIALTY INGREDIENTS GP	tert-Butyl alcohol	124	0
ASHLAND SPECIALTY INGREDIENTS GP	Nitric acid	78	0

Air Toxins and Health Risks

ASHLAND SPECIALTY INGREDIENTS GP	Chloroacetic acid	51	0
ASHLAND SPECIALTY INGREDIENTS GP	Methanol	6	0
ASHLAND SPECIALTY INGREDIENTS GP	Chloroethane (Ethyl chloride)	3	0
ASHLAND SPECIALTY INGREDIENTS GP	Ethylene	3	0
EVONIK INDUSTRIES	Acrylic acid	89	0
EVONIK INDUSTRIES	Allyl alcohol	64	0
EVONIK INDUSTRIES	Propylene oxide	52	52
EVONIK INDUSTRIES	Chloroacetic acid	6	0
ADVANSIX INC HOPEWELL PLANT	Benzene	14,326	14,326
ADVANSIX INC HOPEWELL PLANT	Sulfuric acid	9,637	0
ADVANSIX INC HOPEWELL PLANT	Polycyclic aromatic compounds	973	973
ADVANSIX INC HOPEWELL PLANT	Acetaldehyde	856	856
ADVANSIX INC HOPEWELL PLANT	Ammonia	350	0
ADVANSIX INC HOPEWELL PLANT	Phenol	18	0
WESTROCK CP LLC	Formaldehyde	1,131	1,131
WESTROCK CP LLC	Acetaldehyde	377	377
WESTROCK CP LLC	Hydrogen sulfide	175	0
WESTROCK CP LLC	Hydrochloric acid	27	0
WESTROCK CP LLC	Barium compounds	19	0
WESTROCK CP LLC	Manganese compounds	7	0
WESTROCK CP LLC	Ammonia	2	0
WESTROCK CP LLC	Lead compounds	1	0

4. 22201 - Arlington; PENTAGON RESERVATION

Total RSEI Score: 156,375

Population: 25,409

Median Household Income: \$108,857

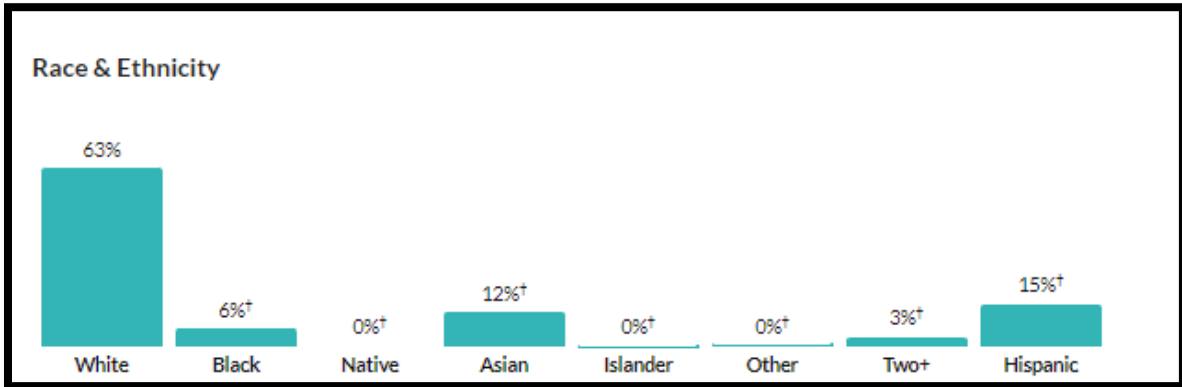


Table 6: 22202 RSEI Score by Facility and Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
PENTAGON RESERVATION	Naphthalene	138,316	138,316
PENTAGON RESERVATION	Biphenyl	9,685	0
PENTAGON RESERVATION	Ethylbenzene	5,390	5,390
PENTAGON RESERVATION	Lead compounds	2,283	0
PENTAGON RESERVATION	1,2,4-Trimethylbenzene	645	0
PENTAGON RESERVATION	Cumene	53	0
PENTAGON RESERVATION	Lead	3	0

5. 23607- Newport News; HUNTINGTON INGALLS, INC.

Total RSEI Score: 141,703

Population: 23,067

Median Household Income: \$33,099

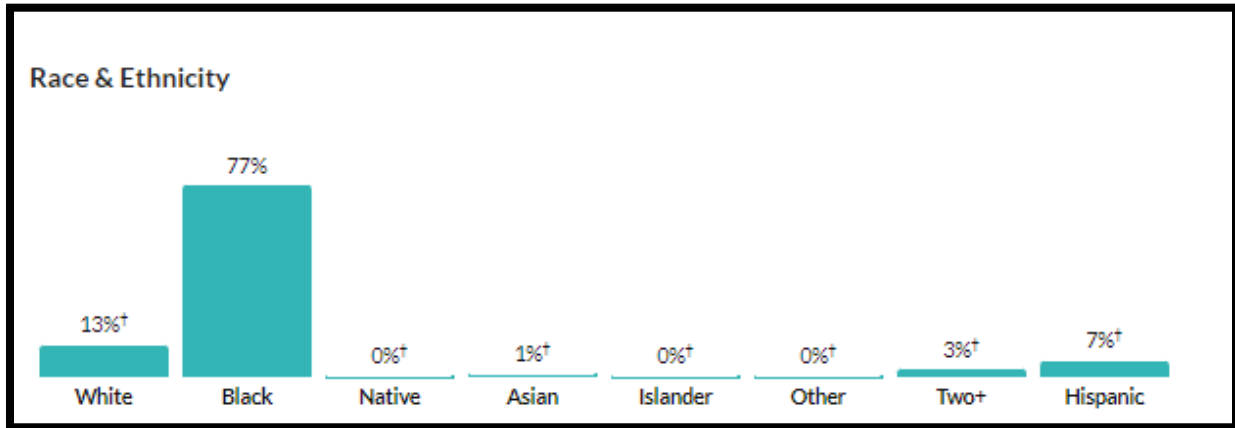


Table 7: Facility RSEI Score by Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
HUNTINGTON INGALLS INC	Nickel	27,733	27,733
HUNTINGTON INGALLS INC	Manganese	1,381	0
HUNTINGTON INGALLS INC	Copper compounds	73	0
HUNTINGTON INGALLS INC	1,2,4-Trimethylbenzene	64	0
HUNTINGTON INGALLS INC	Xylene (mixed isomers)	64	0
HUNTINGTON INGALLS INC	n-Butyl alcohol	34	0
HUNTINGTON INGALLS INC	Lead	5	0

Air Toxins and Health Risks

HUNTINGTON INGALLS INC	Zinc compounds	1	0
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6. 23875- Prince George; METL-SPAN A DIV OF NCI GROUP INC

Total RSEI Score: 141,703
Population: 12,313
Median Household Income: \$63,574

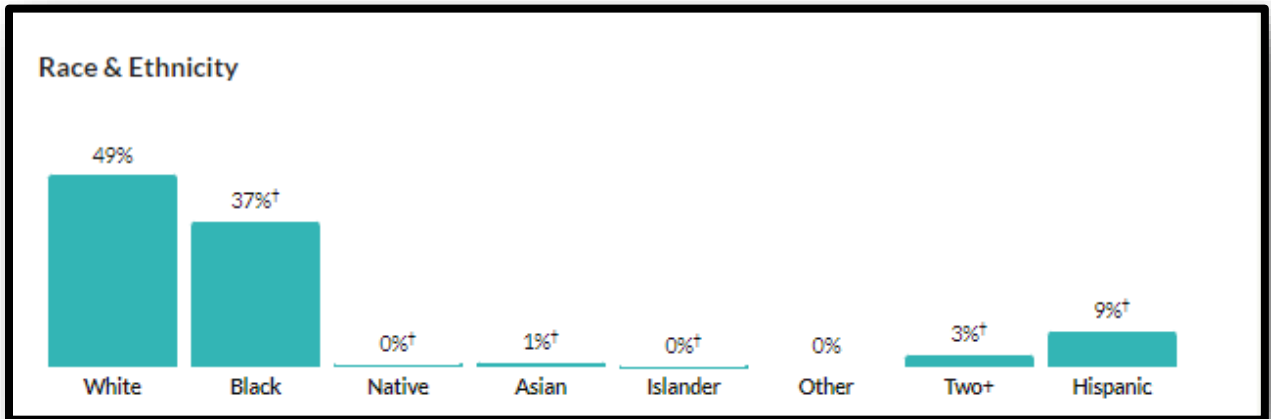


Table 8: Facility RSEI Score By Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
METL-SPAN A DIV OF NCI GROUP INC	Diisocyanates	135,705	0

7. 23523 - Norfolk; BAE SYSTEMS NORFOLK SHIP REPAIR

Total RSEI Score: 71,843

Population: 7,561

Median Household Income: \$30,472

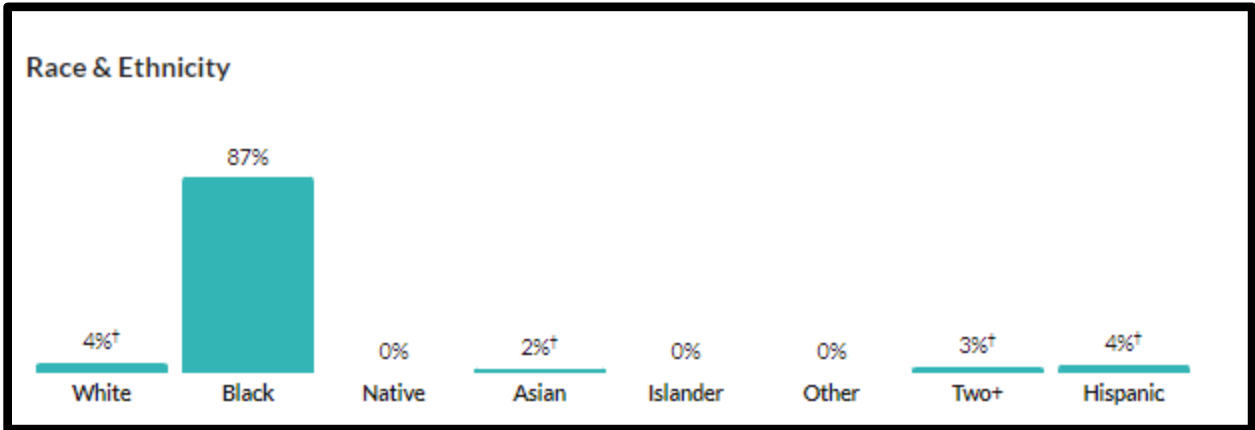


Table 9: Facility RSEI Score By Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
BAE SYSTEMS NORFOLK SHIP REPAIR	Chromium compounds	71,666	71,666
BAE SYSTEMS NORFOLK SHIP REPAIR	Copper compounds	115	0
BAE SYSTEMS NORFOLK SHIP REPAIR	Lead compounds	33	0
BAE SYSTEMS NORFOLK SHIP REPAIR	n-Butyl alcohol	20	0
BAE SYSTEMS NORFOLK SHIP REPAIR	Zinc compounds	5	0
BAE SYSTEMS NORFOLK SHIP REPAIR	Manganese compounds	3	0
BAE SYSTEMS NORFOLK SHIP REPAIR	Nickel compounds	2	2

8. 23234 – Richmond; Carpenter Co Richmond Plant

Total RSEI Score: 51,472

Population: 44,783

Median Household Income: \$49,899

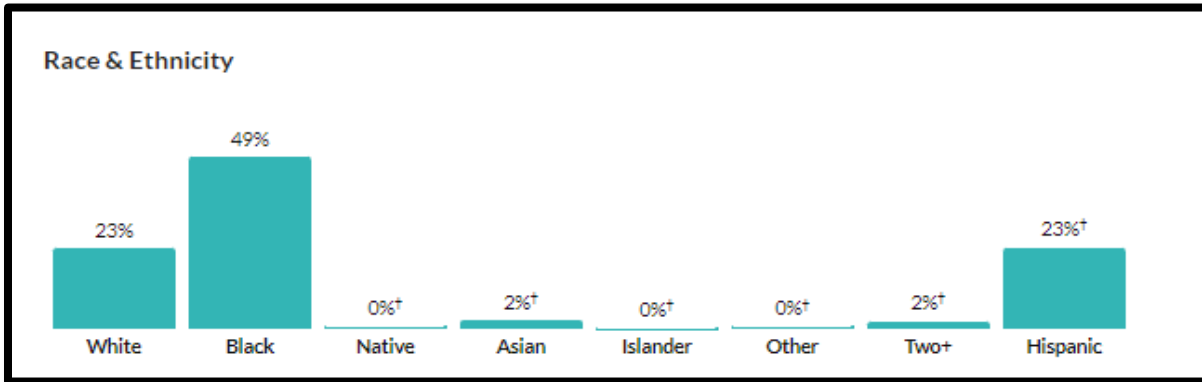


Table 10: Facility RSEI Score By Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
CARPENTER CO RICHMOND PLANT	Diisocyanates	36,629	0
CARPENTER CO RICHMOND PLANT	Toluenediisocyanate	14,843	11,577

9. 23847 – Emporia; STEELFAB OF VIRGINIA INC

Total RSEI Score: 48,737

Population: 15,717

Median Household Income: \$35,667

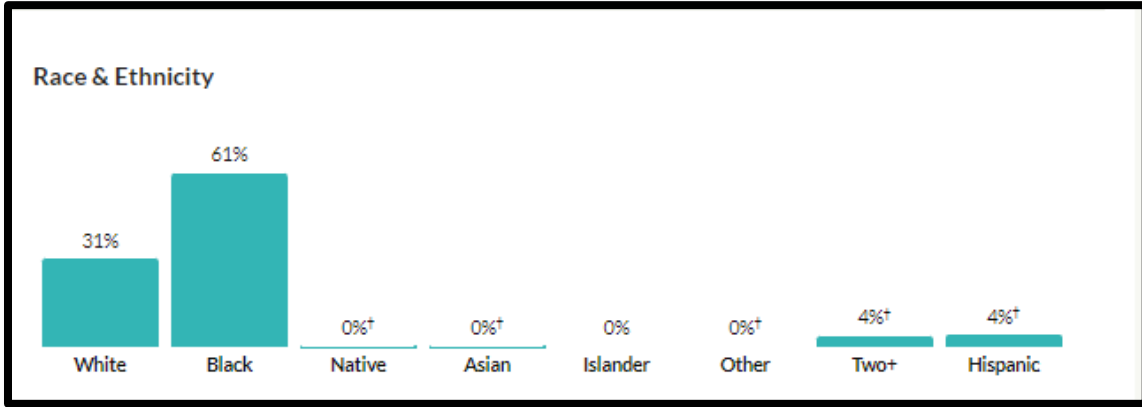


Table 11: Facility RSEI Score By Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
STEELFAB OF VIRGINIA INC	Chromium	24,960	24,960
STEELFAB OF VIRGINIA INC	Nickel	5,501	5,501
STEELFAB OF VIRGINIA INC	Manganese	42	0
STEELFAB OF VIRGINIA INC	Xylene (mixed isomers)	10	0
STEELFAB OF VIRGINIA INC	Copper	7	0
STEELFAB OF VIRGINIA INC	Lead	4	0

10. 23661 - Hampton City; HOWMET CASTINGS & SERVICES INC

Total RSEI Score: 26,202

Population: 12,812

Median Household Income: \$50,843

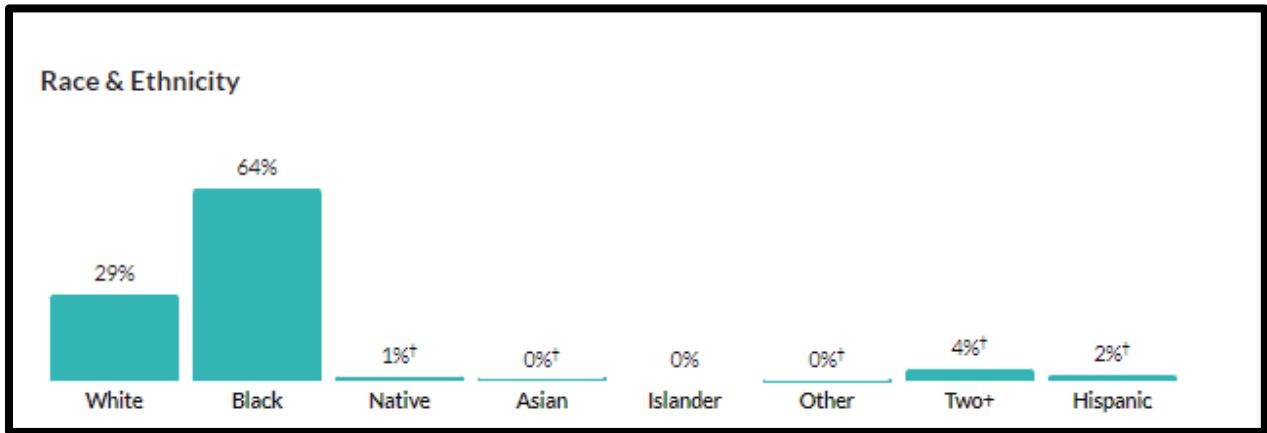
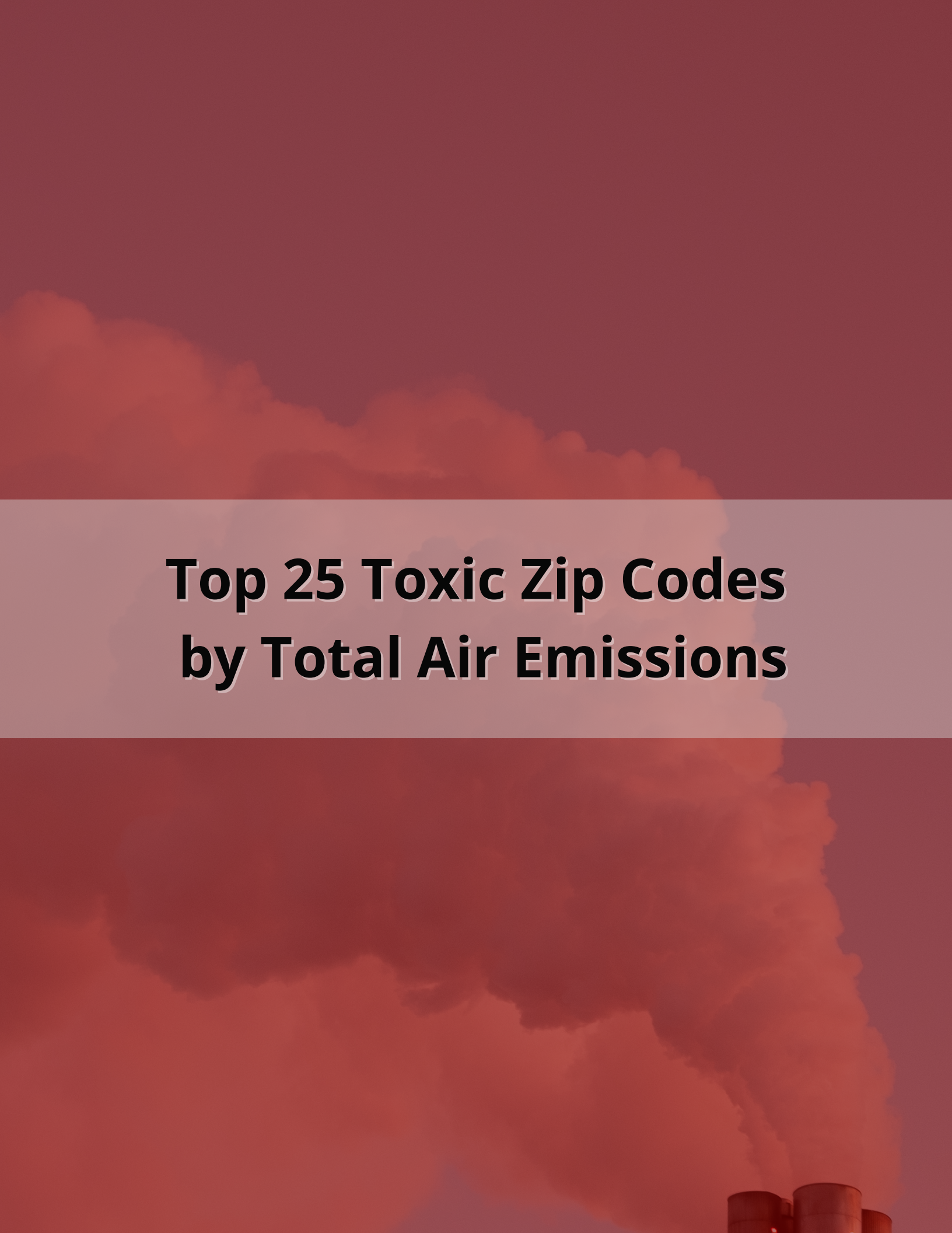


Table 12: Facility RSEI Score By Chemical

Facility	Chemical	RSEI Score	RSEI Cancer
HOWMET CASTINGS & SERVICES INC	Cobalt	14,717	14,717
HOWMET CASTINGS & SERVICES INC	Chromium	10,125	10,125
HOWMET CASTINGS & SERVICES INC	Nickel	1,288	1,288
HOWMET CASTINGS & SERVICES INC	Nitric acid	57	0
HOWMET CASTINGS & SERVICES INC	Hydrogen fluoride	15	0



Top 25 Toxic Zip Codes by Total Air Emissions

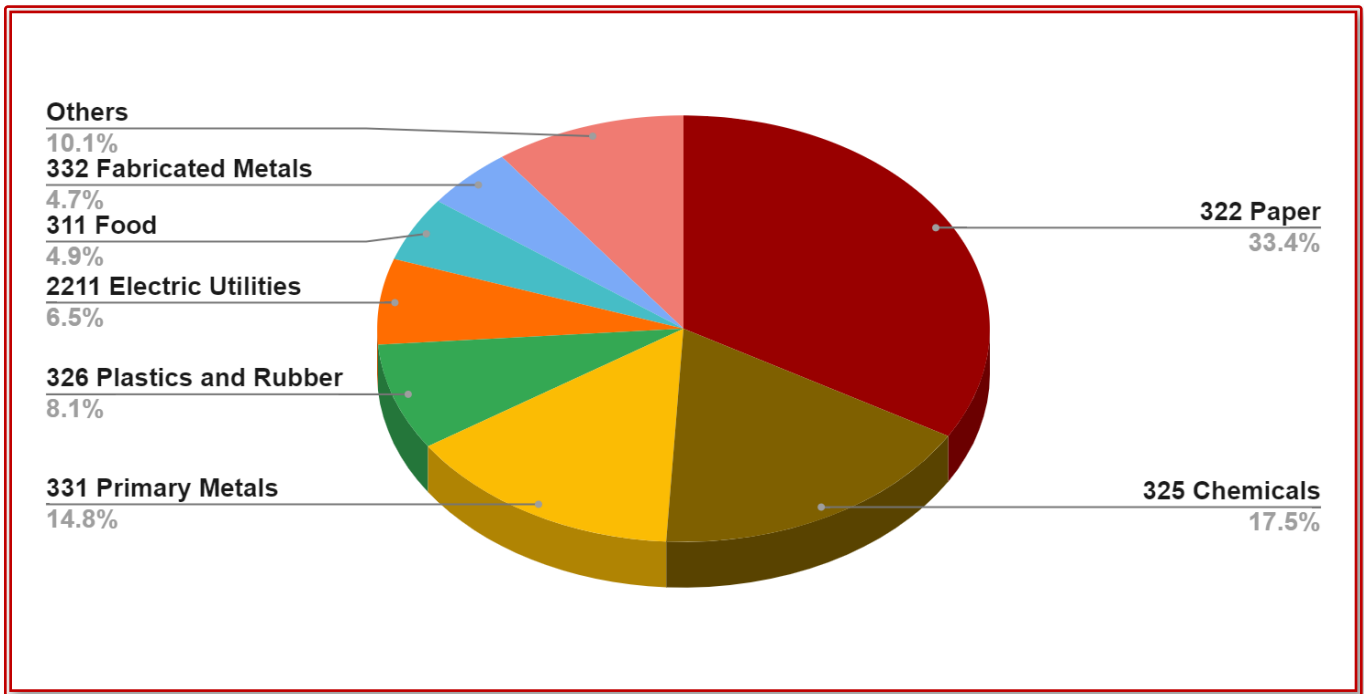
Naming Names (Air Emissions)

RSEI scores are not the only metric that should concern communities. When facilities release pollution, the surrounding communities have a right to know what kind and how much. **In 2019, 331 Toxic facilities in Virginia released 15,120,143.58 lbs. of toxic chemicals into the air.**³⁵ Nearly 85 percent of our total toxic emissions come from 25 facilities. Unfortunately, the rankings found in the following table strike a similar tone to the top 25 air polluting facilities found in [previous toxic reports](#) released by the Sierra Club Virginia Chapter.³⁶

Graph 6 shows the amount of air releases specific to industry. More than 65 percent of all air emissions come from three sectors – paper manufacturing, chemical management, and metal manufacturing. The paper manufacturing facilities run by Westrock alone accounted for more than 3,000,000 million lbs. of chemical releases in 2019.³⁷

***Graph 6: Percentage of Air Releases by Industry Sector³⁸**

Numbers preceding industry name are relevant to [NAICS code](#)*



³⁵ TRI Toxics Tracker (<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>)

³⁶ See Pg. 11 of 2017 Toxics Report

(https://drive.google.com/file/d/1zp5h52Hu7Jb0RLfl_GJsu0eWndwmrtOZ/view#page=11)

³⁷ TRI Toxics Tracker (<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>)

³⁸ Graph 6 created with EPA's Toxics Tracker Tool

(<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html#>)

Table 13: Top 25 Total Air Emissions by Facility³⁹

Rank	ZIP Code	Facility	Location	Air Releases (lbs.)
1	24426	WESTROCK VIRGINIA CORP	104 E RIVERSIDE ST COVINGTON	2,134,119.39
2	24631	JEWELL COKE CO LP	1034 DISMAL RIVER RD OAKWOOD	2,126,605.50
3	23851	INTERNATIONAL PAPER FRANKLIN MILL	34040 UNION CAMP DR FRANKLIN	1,159,919.00
4	23860	ADVANSIX INC HOPEWELL PLANT	905 E RANDOLPH RD HOPEWELL	986,701.00
5	23181	WESTROCK CP LLC	1901 MAIN ST WEST POINT	721,772.36
6	23185	BALL METAL BEVERAGE CONTAINER CORP	8935 POCAHONTAS TRAIL JAMES RIVER COMMERCE CENTER WILLIAMSBURG	567,000.00
7	23860	ASHLAND SPECIALTY INGREDIENTS GP	1111 HERCULES RD HOPEWELL	537,305.00
8	23005	DOSWELL LP	10097 OLD RIDGE RD ASHLAND	514,223.00
9	23324	PERDUE AGRIBUSINESS LLC-CHESAPEAKE VA	501A BARNES RD CHESAPEAKE	478,620.00
10	24526	GEORGIA-PACIFIC BIG ISLAND MILL	9363 LEE-JACKSON HWY BIG ISLAND	372,155.60

³⁹ Data sorted by creating custom table from EPA's Toxics Tracker Tool
(<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>)

Air Toxins and Health Risks

11	23860	WESTROCK CP LLC	910 INDUSTRIAL ST HOPEWELL	348,888.90
12	24521	GREIF PACKAGING LLC	861 FIBRE PLANT RD AMHERST	316,707.50
13	23234	SPRUANCE PLANT	5401 JEFFERSON DAVIS HWY NORTH CHESTERFIELD	301,389.00
14	23836	PHILIP MORRIS USA PARK 500 SITE	4100 BERMUDA HUNDRED RD CHESTER	281,945.00
15	23834	HONEYWELL INTERNATIONAL COLONIAL HEIGHTS PLANT	15801 WOODS EDGE RD COLONIAL HEIGHTS	271,881.00
16	23834	CHURCH & DWIGHT CO INC	1851 TOUCHSTONE RD COLONIAL HEIGHTS	254,447.77
17	24089	EASTMAN PERFORMANCE FILMS LLC - PLANT II	4129 THE GREAT RD FIELDALE	242,956.00
18	24124	CELANESE ACETATE LLC - CELCO P LANT	3520 VIRGINIA AVE NARROWS	192,239.68
19	24534	CLOVER POWER STATION	4091 CLOVER RD CLOVER	186,630.40
20	24592	AQUATIC CO	1100 INDUSTRIAL PARK RD HALIFAX INDUSTRIAL PARK SOUTH BOSTON	179,004.00
21	24283	VIRGINIA CITY HYBRID ENERGY CENTER **	3425 RUSSELL CREEK RD SAINT PAUL	142,176.06

Air Toxins and Health Risks

22	22201	PENTAGON RESERVATION	2 N ROTARY RD, Arlington	138,514.40
23	23231	MONDELEZ GLOBAL LLC	6002 S LABURNUM AVE, RICHMOND	127,453.00
24	23836	CHESTERFIELD POWER STATION	500 COXENDALE RD CHESTER	114,249.90
25	23944	VIRGINIA MARBLE MANUFACTURERS INC	CORNER OF BRUNSWICK & OAK ST KENBRIDGE	112,220.00

**** Despite the clean energy implications of its name, Virginia Hybrid Energy Center is a coal plant located in Wise county.**

Most Toxic Zip Codes by Total Air Emissions

Table 14: Top 25 Most Toxic Zip Codes by air releases in 2019 ⁴⁰

Rank	ZIP Code	Air Emissions (lbs.)	Population within Zip Code	City	County
1	24426	2,180,320.39	13,451	COVINGTON	COVINGTON (CITY)
2	24631	2,126,605.50	2,334	OAKWOOD	BUCHANAN
3	23860	1,874,704.38	30,524	HOPEWELL	HOPEWELL (CITY)
4	23851	1,159,919.50	13,437	FRANKLIN	ISLE OF WIGHT
5	23181	721,772.36	5,232	WEST POINT	KING WILLIAM
6	23185	583,610.86	47,894	WILLIAMSBURG	JAMES CITY
7	23834	526,328.77	26,017	COLONIAL HEIGHTS	CHESTERFIELD
8	23005	519,927.00	17,602	ASHLAND	HANOVER
9	23324	478,620.00	23,893	CHESAPEAKE	CHESAPEAKE (CITY)
10	23836	460,519.01	13,787	CHESTER	CHESTERFIELD
11	24526	372,155.60	1,264	BIG ISLAND	BEDFORD
12	24521	316,707.50	9,830	AMHERST	AMHERST

⁴⁰ Data sorted by creating custom table from EPA's Toxics Tracker Tool (<https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>)

Air Toxins and Health Risks

13	23234	301,389.00	44,783	NORTH CHESTERFIELD	CHESTERFIELD
14	24089	246,305.00	2,440	FIELDALE	HENRY
15	24124	192,239.68	4,785	NARROWS	GILES
16	24534	186,630.40	1,208	CLOVER	HALIFAX
17	24592	179,188.00	13,342	SOUTH BOSTON	HALIFAX
18	24283	142,176.06	2,130	SAINT PAUL	WISE
19	22201	138,514.40	38,541	ARLINGTON	ARLINGTON
20	23231	127,453.00	36,564	RICHMOND	RICHMOND
21	24141	125,343.73	22,989	RADFORD	MONTGOMERY
22	23944	112,220.00	23944	KENBRIDGE	LUNENBURG
23	23607	99,356.62	23,067	NEWPORT NEWS	NEWPORT NEWS (CITY)
24	24539	94,402.00	80	CRYSTAL HILL	HALIFAX
25	24540	90,090.50	31,607	DANVILLE	PITTSYLVANIA

1. 24426 - Covington, Virginia

Total Air Emissions in 2019: 2,180,320.39 (lbs.)

Population: 13,451

Median Household Income: \$46,565

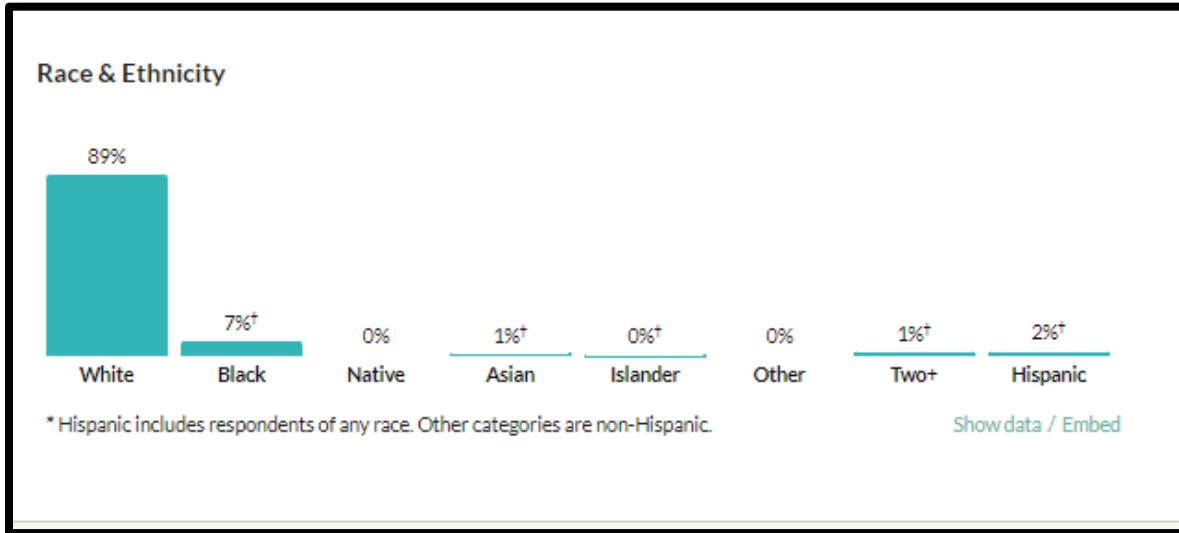


Table 15: 24426 Total Chemical Releases by Facility

Facility	Chemical	Air Releases (lbs.)
WESTROCK VIRGINIA CORP	Methanol (67-56-1)	1,465,400.00
WESTROCK VIRGINIA CORP	Hydrochloric acid (7647-01-0)	208,000.00
WESTROCK VIRGINIA CORP	Ammonia (7664-41-7)	206,411.00
WESTROCK VIRGINIA CORP	Hydrogen sulfide (7783-06-4)	89,300.00
WESTROCK VIRGINIA CORP	Sulfuric acid (7664-93-9)	54,100.00
WESTROCK VIRGINIA CORP	Acetaldehyde (75-07-0)	47,830.00
WESTROCK VIRGINIA CORP	Phenol (108-95-2)	33,307.45
WESTROCK VIRGINIA CORP	Formaldehyde (50-00-0)	13,316.30
WESTROCK VIRGINIA CORP	Cresol (mixed isomers) (1319-77-3)	9,146.59
WESTROCK VIRGINIA CORP	Chlorine dioxide (10049-04-4)	3,925.00
WESTROCK VIRGINIA CORP	Barium and barium compounds (N040)	1,450.00
WESTROCK VIRGINIA CORP	Zinc compounds (N982)	553.00
WESTROCK VIRGINIA CORP	Chlorine (7782-50-5)	485.00
WESTROCK VIRGINIA CORP	Manganese and manganese compounds (N450)	405.00
WESTROCK VIRGINIA CORP	Polycyclic aromatic compounds (N590)	321.00
WESTROCK VIRGINIA CORP	Lead and lead compounds (N420)	128.00
WESTROCK VIRGINIA CORP	Mercury and mercury compounds (N458)	24.90
WESTROCK VIRGINIA CORP	Vanadium compounds (N770)	13.00
WESTROCK VIRGINIA CORP	Benzo(g,h,i)perylene (191-24-2)	3.11
WESTROCK VIRGINIA CORP	Formic acid (64-18-6)	0.04
INGEVITY VIRGINIA CORP	Methanol (67-56-1)	35,000.00
INGEVITY VIRGINIA CORP	Formic acid (64-18-6)	9,800.00
INGEVITY VIRGINIA CORP	Formaldehyde (50-00-0)	1,119.00

INGEVITY VIRGINIA CORP	Acetaldehyde (75-07-0)	282.00
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2. 24631 - Patterson

Total releases: 2,126,605.50 (lbs.)

Facilities: Jewel Coke CO LP

Population: 2,334

Median Household Income: \$32,500

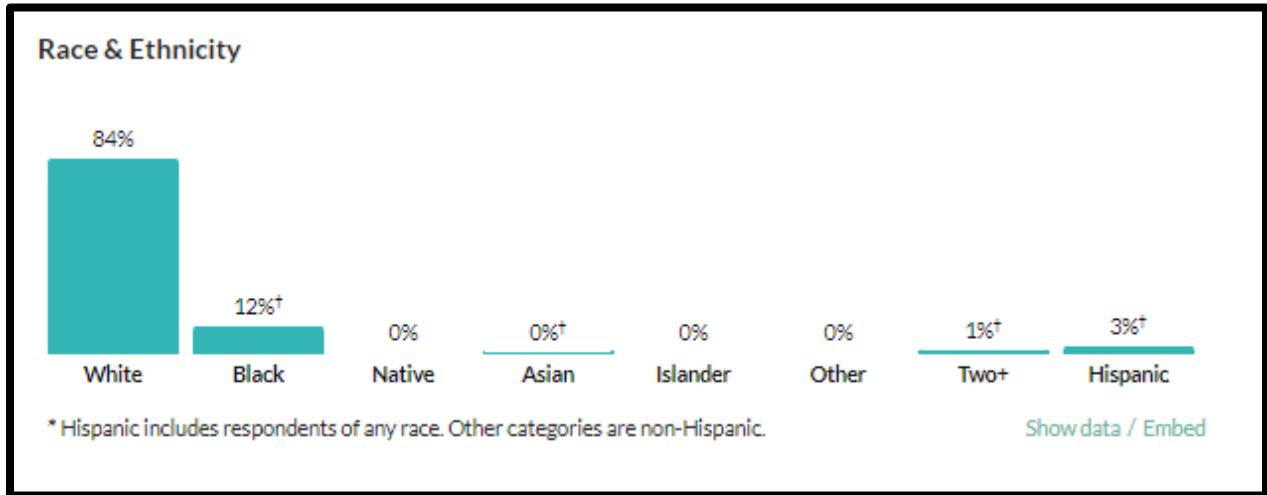


Table 16: 24631 Total Releases by Chemical and Facility

Facility	Chemical	Air Releases (lbs.)
JEWELL COKE CO LP	Hydrochloric acid (7647-01-0)	1,619,459.00
JEWELL COKE CO LP	Sulfuric acid (7664-93-9)	467,009.00
JEWELL COKE CO LP	Hydrogen fluoride (7664-39-3)	35,545.00
JEWELL COKE CO LP	Lead and lead compounds (N420)	4,505.40
JEWELL COKE CO LP	Mercury and mercury compounds (N458)	87.10

3. 23860 - Hopewell City

Total Air Emissions: 1,874,704.38 (lbs.)

Population: 30,524

Median Household Income: \$42,934

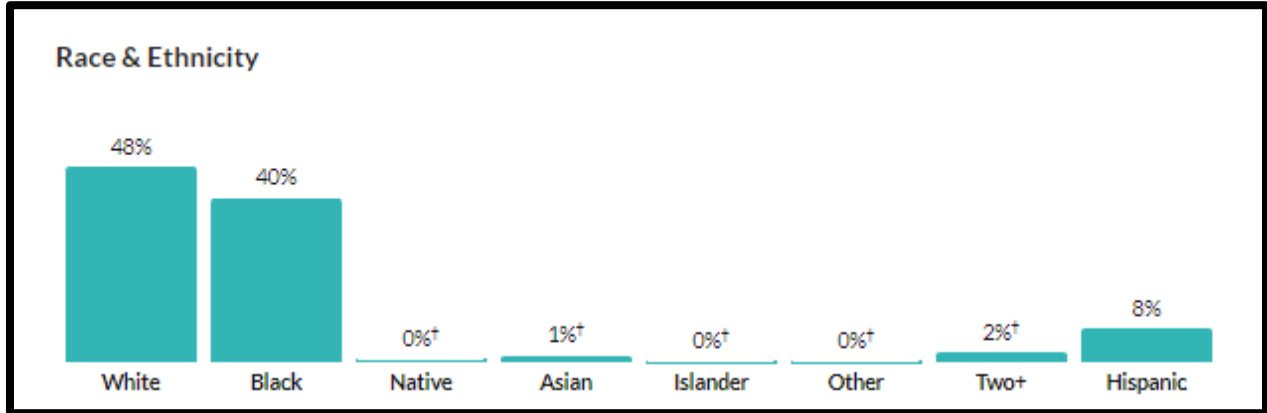


Table 17: 23860 Releases by Chemical and Facility

Facility	Chemical	Air Releases (lbs.)
ADVANSIX INC HOPEWELL PLANT	Ammonia (7664-41-7)	874,229.00
ADVANSIX INC HOPEWELL PLANT	Sulfuric acid (7664-93-9)	46,877.00
ADVANSIX INC HOPEWELL PLANT	Phenol (108-95-2)	22,081.00
ADVANSIX INC HOPEWELL PLANT	Toluene (108-88-3)	12,820.00
ADVANSIX INC HOPEWELL PLANT	Methanol (67-56-1)	12,335.00
ADVANSIX INC HOPEWELL PLANT	Benzene (71-43-2)	9,231.00
ADVANSIX INC HOPEWELL PLANT	Cyclohexanol (108-93-0)	3,849.00
ADVANSIX INC HOPEWELL PLANT	Nitrate compounds (N511)	3,420.00
ADVANSIX INC HOPEWELL PLANT	Acetaldehyde (75-07-0)	1,797.00
ADVANSIX INC HOPEWELL PLANT	Polycyclic aromatic compounds (N590)	62.00
ASHLAND SPECIALTY INGREDIENTS GP	Methanol (67-56-1)	279,387.00

Air Toxins and Health Risks

ASHLAND SPECIALTY INGREDIENTS GP	tert-Butyl alcohol (75-65-0)	103,954.00
ASHLAND SPECIALTY INGREDIENTS GP	Chloroethane (Ethyl chloride) (75-00-3)	79,977.00
ASHLAND SPECIALTY INGREDIENTS GP	Ethylene (74-85-1)	67,089.00
ASHLAND SPECIALTY INGREDIENTS GP	Propylene oxide (75-56-9)	2,673.00
ASHLAND SPECIALTY INGREDIENTS GP	Nitric acid (7697-37-2)	2,316.00
ASHLAND SPECIALTY INGREDIENTS GP	Ethylene oxide (75-21-8)	998.00
ASHLAND SPECIALTY INGREDIENTS GP	Chloroacetic acid (79-11-8)	830.00
ASHLAND SPECIALTY INGREDIENTS GP	Ethylene glycol (107-21-1)	72.00
ASHLAND SPECIALTY INGREDIENTS GP	Glycol ethers (N230)	9.00
WESTROCK CP LLC	Methanol (67-56-1)	222,000.00
WESTROCK CP LLC	Ammonia (7664-41-7)	54,600.00
WESTROCK CP LLC	Hydrochloric acid (7647-01-0)	30,400.00
WESTROCK CP LLC	Hydrogen sulfide (7783-06-4)	20,100.00
WESTROCK CP LLC	Acetaldehyde (75-07-0)	10,500.00
WESTROCK CP LLC	Phenol (108-95-2)	5,390.00
WESTROCK CP LLC	Formaldehyde (50-00-0)	5,220.00
WESTROCK CP LLC	Barium compounds (N040)	556.00
WESTROCK CP LLC	Manganese compounds (N450)	110.00
WESTROCK CP LLC	Lead and lead compounds (N420)	12.90
EVONIK INDUSTRIES	Acrylic acid (79-10-7)	660.30
EVONIK INDUSTRIES	Ethylene glycol (107-21-1)	480.46
EVONIK INDUSTRIES	Chloroacetic acid (79-11-8)	289.00
EVONIK INDUSTRIES	Allyl alcohol (107-18-6)	147.58
EVONIK INDUSTRIES	Ethylene oxide (75-21-8)	73.08
EVONIK INDUSTRIES	Propylene oxide (75-56-9)	67.43
EVONIK INDUSTRIES	n-Butyl alcohol (71-36-3)	45.58
CITY POINT ENERGY CENTER	Mercury compounds (N458)	38.67
CITY POINT ENERGY CENTER	Lead compounds (N420)	2.77

Air Toxins and Health Risks

ASSOCIATED ASPHALT HOPEWELL LLC	Polycyclic aromatic compounds (N590)	4.57
ASSOCIATED ASPHALT HOPEWELL LLC	Benzo(g,h,i)perylene (191-24-2)	0.04

23851- Franklin

Total Air Emissions: 1,159,919.50 (lbs.)

Population: 13,437

Median Household Income: \$47,631

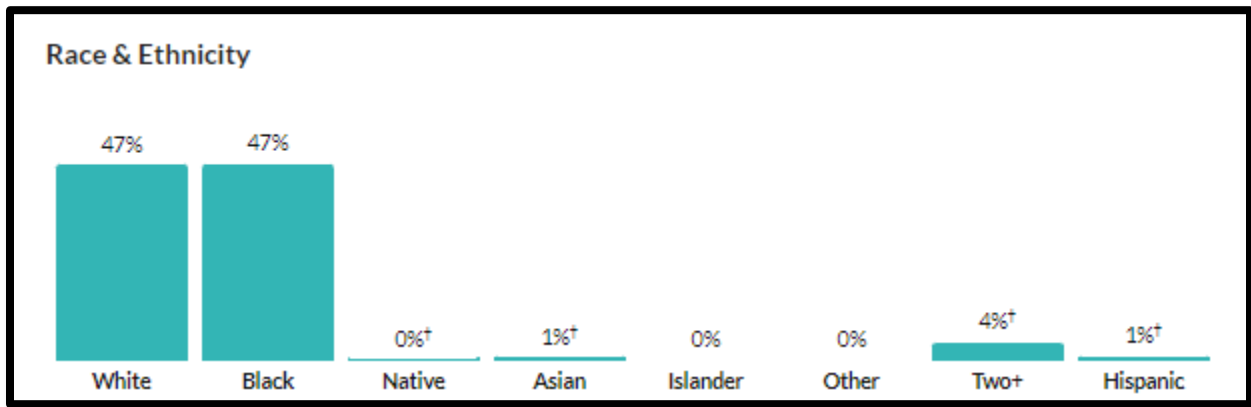


Table 18: 23851 Releases by Chemical and Facility

Facility	Chemical	Air Releases (lbs.)
INTERNATIONAL PAPER FRANKLIN MILL	Methanol (67-56-1)	768,748.00
INTERNATIONAL PAPER FRANKLIN MILL	Hydrogen sulfide (7783-06-4)	142,028.00
INTERNATIONAL PAPER FRANKLIN MILL	Ammonia (7664-41-7)	117,824.00
INTERNATIONAL PAPER FRANKLIN MILL	Hydrochloric acid (7647-01-0)	52,348.00

Air Toxins and Health Risks

INTERNATIONAL PAPER FRANKLIN MILL	Acetaldehyde (75-07-0)	27,961.00
INTERNATIONAL PAPER FRANKLIN MILL	Phenol (108-95-2)	17,218.00
INTERNATIONAL PAPER FRANKLIN MILL	Cresol (mixed isomers) (1319-77-3)	16,896.00
INTERNATIONAL PAPER FRANKLIN MILL	Formaldehyde (50-00-0)	8,818.00
INTERNATIONAL PAPER FRANKLIN MILL	Chlorine (7782-50-5)	6,030.00
INTERNATIONAL PAPER FRANKLIN MILL	Chlorine dioxide (10049-04-4)	1,835.00
INTERNATIONAL PAPER FRANKLIN MILL	Polycyclic aromatic compounds (N590)	100
INTERNATIONAL PAPER FRANKLIN MILL	Manganese compounds (N450)	60
INTERNATIONAL PAPER FRANKLIN MILL	Lead compounds (N420)	31
INTERNATIONAL PAPER FRANKLIN MILL	Barium compounds (N040)	22

5. 23181 - West Point

Total Air Releases: 721,772.36 (lbs.)

Population: 5,232

Median Household Income: \$71,583

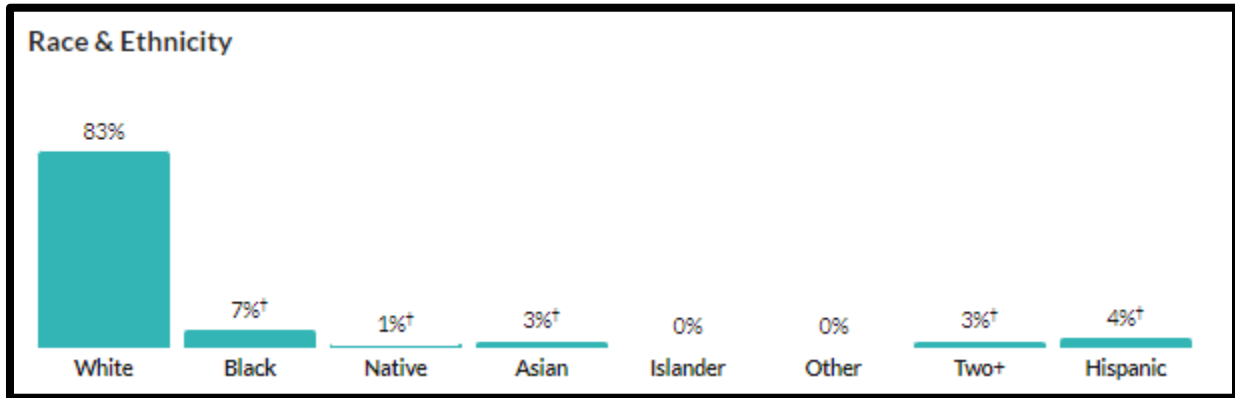


Table 19: 23181 Releases by Chemical and Facility

Facility	Chemical	Air Releases (lbs.)
WESTROCK CP LLC	Methanol (67-56-1)	443,715.60
WESTROCK CP LLC	Ammonia (7664-41-7)	129,299.60
WESTROCK CP LLC	Hydrogen sulfide (7783-06-4)	49,990.50
WESTROCK CP LLC	Hydrochloric acid (7647-01-0)	44,676.80
WESTROCK CP LLC	Acetaldehyde (75-07-0)	24,850.19
WESTROCK CP LLC	Phenol (108-95-2)	16,482.00
WESTROCK CP LLC	Formaldehyde (50-00-0)	11,044.53
WESTROCK CP LLC	Barium and barium compounds (N040)	607.8
WESTROCK CP LLC	Manganese and manganese compounds (N450)	328.7
WESTROCK CP LLC	Cresol (mixed isomers) (1319-77-3)	254.46

Air Toxins and Health Risks

WESTROCK CP LLC	Polycyclic aromatic compounds (N590)	216
WESTROCK CP LLC	Zinc compounds (N982)	170.5
WESTROCK CP LLC	Chlorine dioxide (10049-04-4)	74.9
WESTROCK CP LLC	Lead and lead compounds (N420)	32.51
WESTROCK CP LLC	Mercury and mercury compounds (N458)	13.8
WESTROCK CP LLC	Chlorine (7782-50-5)	11.7
WESTROCK CP LLC	Benzo(g,h,i)perylene (191-24-2)	2.07
WESTROCK CP LLC	Formic acid (64-18-6)	0.6
WESTROCK CP LLC	Catechol (120-80-9)	0.1

6. 23185 - Williamsburg

Total Releases: 583,610.86 (lbs.)

Population: 47,894

Median Household Income: \$84,085

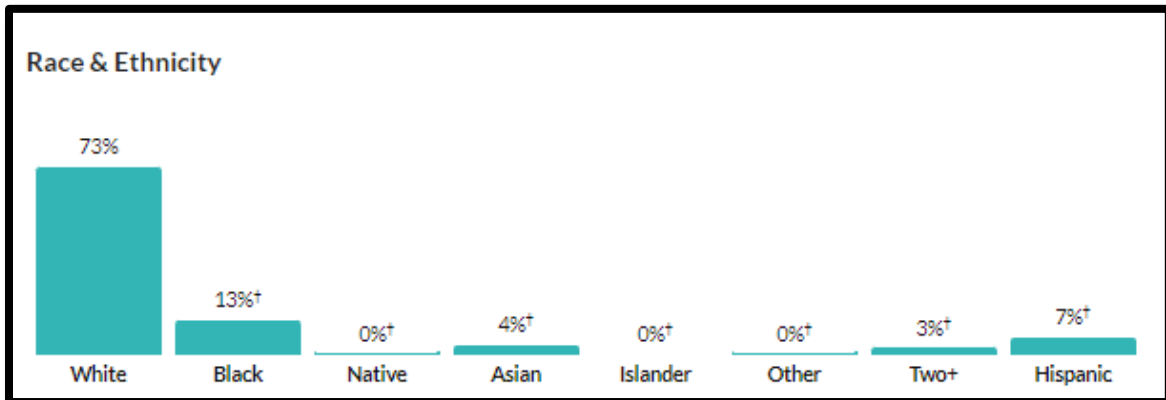


Table 20: 23185 Releases by Chemical and Facility*

Facility	Chemical	Air Releases (lbs.)
BALL METAL BEVERAGE CONTAINER CORP	Glycol ethers (N230)	360,000.00

Air Toxins and Health Risks

BALL METAL BEVERAGE CONTAINER CORP	n-Butyl alcohol (71-36-3)	207,000.00
ANHEUSER-BUSCH LLC	Ammonia (7664-41-7)	16,610.00
BRANSCOME-LEE HALL	Polycyclic aromatic compounds (N590)	0.78
BRANSCOME-LEE HALL	Lead and lead compounds (N420)	0.08
BRANSCOME-LEE HALL	Benzo(g,h,i)perylene (191-24-2)	0.01

*two facilities were excluded given that their chemical releases were less than "1lb"

7. 23834 - Chesterfield

Total Releases: 526,328.77 (lbs.)

Population: 26,017

Median Household Income: \$60,631

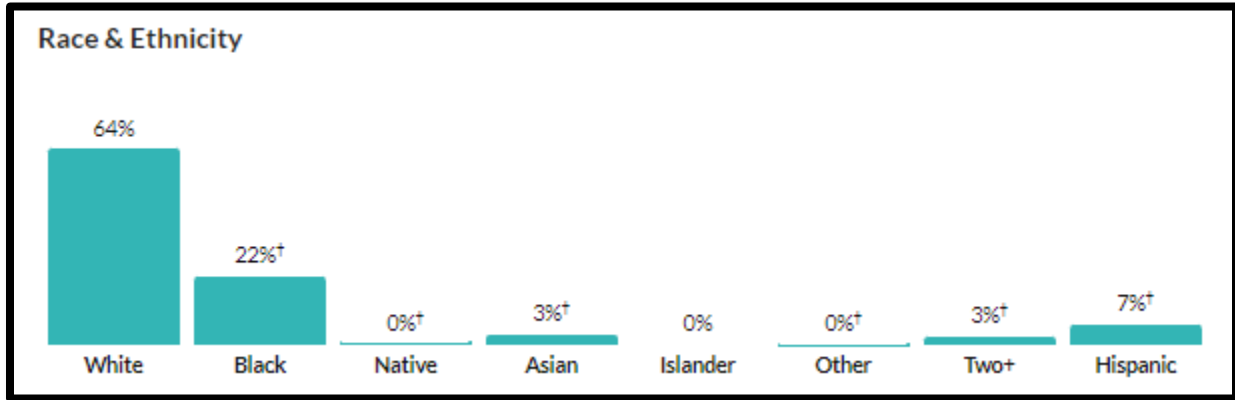


Table 21: 23834 Releases by Chemical and Facility

Facility	Chemical	Air Releases (lbs.)
HONEYWELL INTERNATIONAL COLONIAL HEIGHTS PLANT	Freon 113 (76-13-1)	271,881.00
CHURCH & DWIGHT CO INC	Ammonia (7664-41-7)	254,341.00
CHURCH & DWIGHT CO INC	Nitrate compounds (N511)	106.77

8. 23005 - Ashland

Total Releases: 526,328.77 (lbs.)

Population: 17,602

Median Household Income: \$72,558

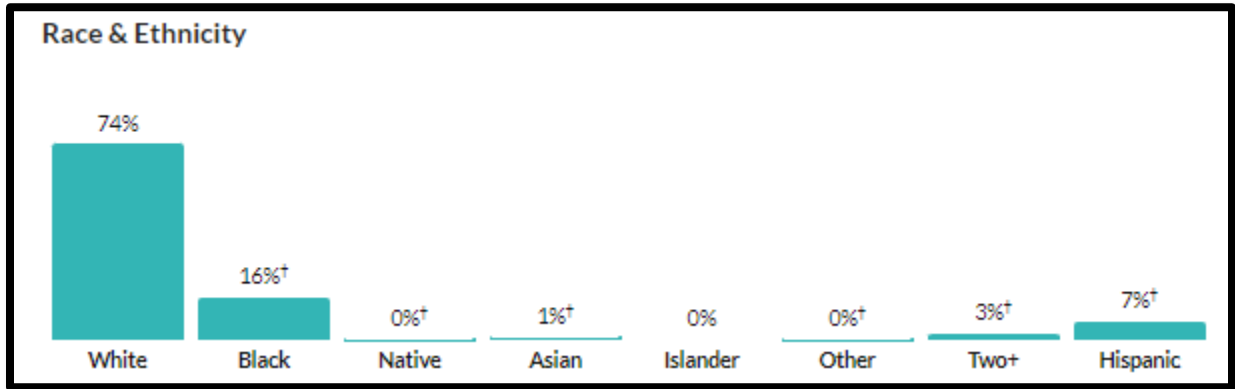


Table 22: 23005 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
DOSWELL LP	Ammonia (7664-41-7)	357,031.00
DOSWELL LP	1,2,4-Trimethylbenzene (95-63-6)	61,643.00
DOSWELL LP	n-Hexane (110-54-3)	61,643.00
DOSWELL LP	Naphthalene (91-20-3)	33,906.00
SOUTH ATLANTIC GALVANIZING LLC	Zinc compounds (N982)	5,656.00
CONCRETE PIPE & PRECAST LLC- HANOVER PIPE PLANT	Manganese (7439-96-5)	28.65

Air Toxins and Health Risks

SOUTH ATLANTIC GALVANIZING LLC	Lead (7439-92-1)	18.93
CONCRETE PIPE & PRECAST LLC- HANOVER PIPE PLANT	Lead (7439-92-1)	0.23
CONCRETE PIPE & PRECAST LLC-ASHLAND PRECAST PLANT	Lead (7439-92-1)	0.19

9. 23324- Chesapeake

Total Releases: 478,620.00 (lbs.)

Population: 23,893

Median Household Income: \$42,023

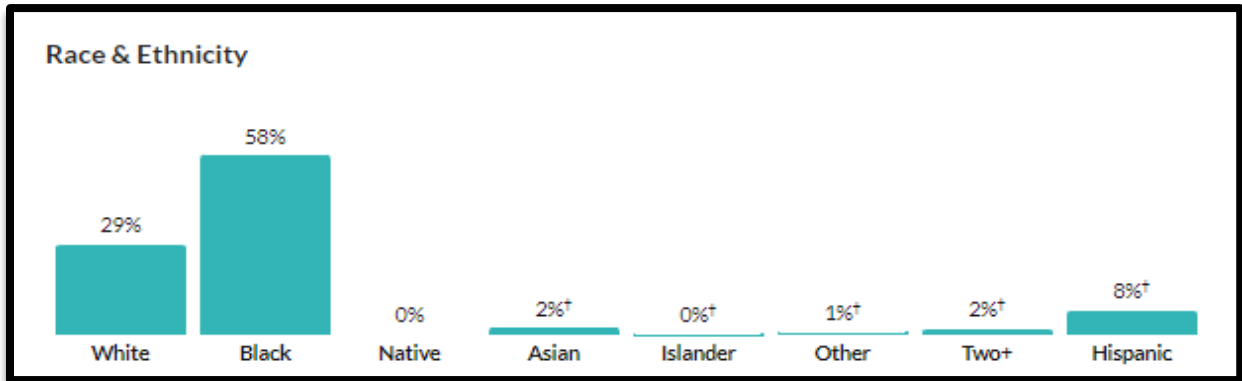


Table 23: 23324 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
PERDUE AGRIBUSINESS LLC-CHESAPEAKE VA	n-Hexane (110-54-3)	478,620.00

10. 23324 - Chester

Total Releases: 478,620.00 (lbs.)

Population: 13,787

Median Household Income: \$42,023

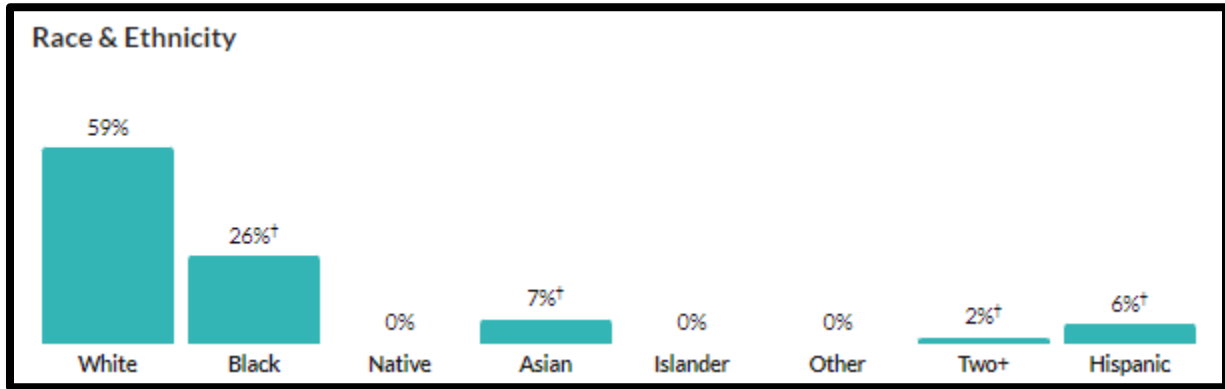


Table 24: 23836 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
PHILIP MORRIS USA PARK 500 SITE	Ammonia (7664-41-7)	266,643.00
PHILIP MORRIS USA PARK 500 SITE	Nicotine and salts (N503)	15,302.00
CHESTERFIELD POWER STATION	Hydrochloric acid (7647-01-0)	88,000.00
CHESTERFIELD POWER STATION	Sulfuric acid (7664-93-9)	15,000.00
CHESTERFIELD POWER STATION	Hydrogen fluoride (7664-39-3)	11,000.00
CHESTERFIELD POWER STATION	Barium compounds (N040)	82
CHESTERFIELD POWER STATION	Ammonia (7664-41-7)	80
CHESTERFIELD POWER STATION	Vanadium compounds (N770)	43
CHESTERFIELD POWER STATION	Lead compounds (N420)	39.3
CHESTERFIELD POWER STATION	Mercury compounds (N458)	4.6
CHESTERFIELD POWER STATION	Polycyclic aromatic compounds (N590)	1
DUPONT TEIJIN FILMS	Acetaldehyde (75-07-0)	62,000.00
DUPONT TEIJIN FILMS	Creosote, coal tar (8001-58-9)	985.84

Air Toxins and Health Risks

DUPONT TEIJIN FILMS	Ethylene glycol (107-21-1)	880
DUPONT TEIJIN FILMS	Polycyclic aromatic compounds (N590)	9.27
SAFETY-KLEEN SYSTEMS CHESTER (CVA)	Ethylene glycol (107-21-1)	4
TRIDENT AMERICAS	Copper compounds (N100)	445

11. 24526 - Big Island

Total Releases: 372,155.60 (lbs.)

Population: 1,264

Median Household Income: \$58,167

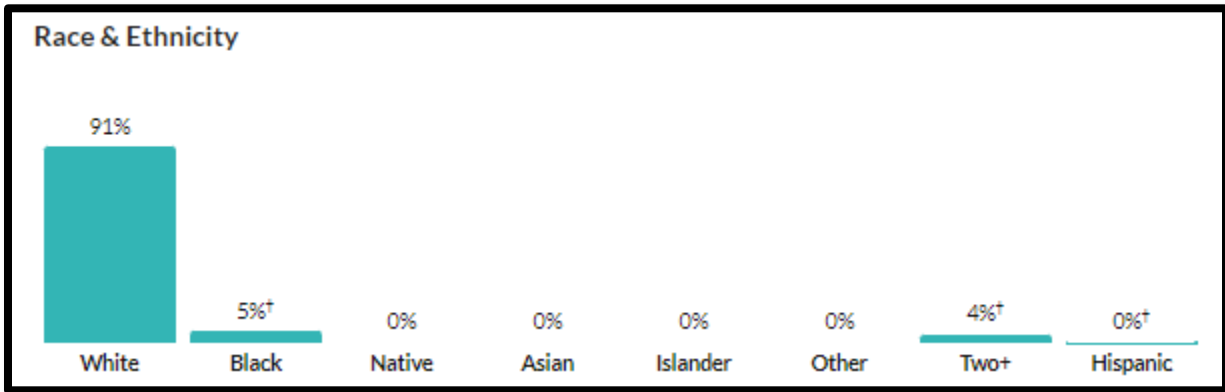


Table 25: 24526 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
GEORGIA-PACIFIC BIG ISLAND MILL	Methanol (67-56-1)	304,100.00
GEORGIA-PACIFIC BIG ISLAND MILL	Acetaldehyde (75-07-0)	52,200.00
GEORGIA-PACIFIC BIG ISLAND MILL	Hydrogen sulfide (7783-06-4)	15,000.00
GEORGIA-PACIFIC BIG ISLAND MILL	Ammonia (7664-41-7)	650.00
GEORGIA-PACIFIC BIG ISLAND MILL	Manganese compounds (N450)	163.00
GEORGIA-PACIFIC BIG ISLAND MILL	Lead compounds (N420)	40.20
GEORGIA-PACIFIC BIG ISLAND MILL	Mercury compounds (N458)	2.40

12. 24521 - Amherst

Total Releases: 316,707.50 (lbs.)

Population: 9,830

Median Household Income: \$54,712

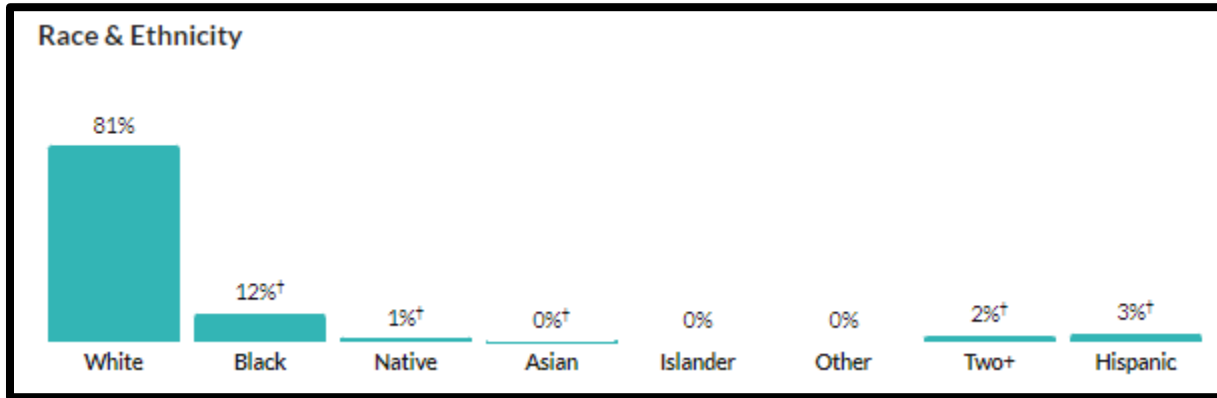


Table 26: 24521 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
GREIF PACKAGING LLC	Methanol (67-56-1)	275,395.00
GREIF PACKAGING LLC	Acetaldehyde (75-07-0)	41,308.00
GREIF PACKAGING LLC	Lead (7439-92-1)	4.5

13. 23234 - North Chesterfield, Richmond

Total Air Releases: 301,389.00 (lbs.)

Population: 44,783

Median Household Income: \$49,899

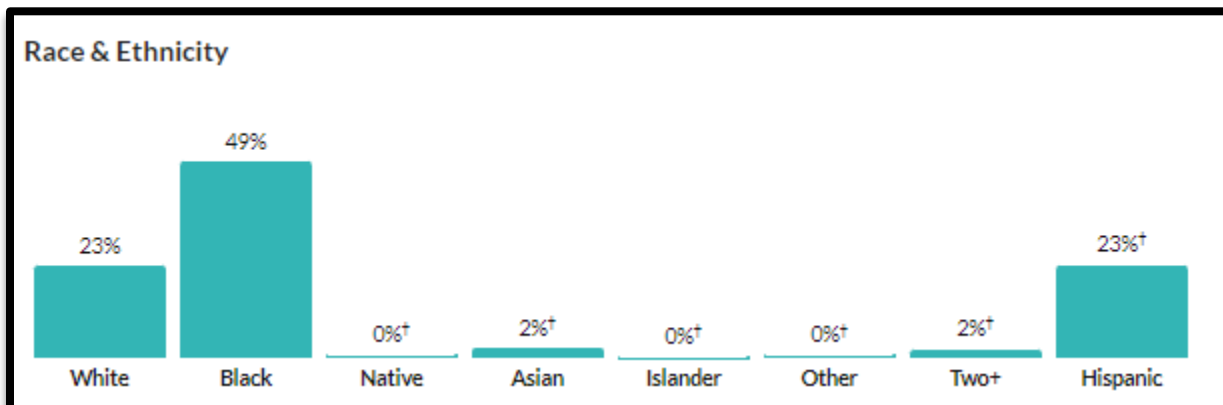


Table 27: 23234 Chemical Releases by Facilities in

Facility	Chemical	Air Releases (lbs.)
SPRUANCE PLANT	CFC-11 (trichlorofluoromethane) (75-69-4)	127,726.00
SPRUANCE PLANT	Toluene (108-88-3)	86,460.00
SPRUANCE PLANT	N-methyl-2-pyrrolidone (872-50-4)	46,380.00
SPRUANCE PLANT	Dimethylamine (124-40-3)	18,419.00
SPRUANCE PLANT	Ammonia (7664-41-7)	15,967.00
SPRUANCE PLANT	Chloroform (67-66-3)	6,415.00
SPRUANCE PLANT	Polycyclic aromatic compounds (N590)	22
SPRUANCE GENCO LLC	Hydrogen fluoride (7664-39-3)	2,002.00
SPRUANCE GENCO LLC	Sulfuric acid (7664-93-9)	47.19
SPRUANCE GENCO LLC	Lead and lead compounds (N420)	32.83
UPACO ADHESIVES INC	Toluene (108-88-3)	2,056.00
UPACO ADHESIVES INC	Xylene (mixed isomers) (1330-20-7)	1,612.00
PHILIP MORRIS USA COMMERCE ROAD SITE	Nicotine and salts (N503)	9,603.00
KINDER MORGAN TRANSMIX CO LLC	Xylene (mixed isomers) (1330-20-7)	290.19
KINDER MORGAN TRANSMIX CO LLC	Toluene (108-88-3)	277.13
KINDER MORGAN TRANSMIX CO LLC	Benzene (71-43-2)	155.06
KINDER MORGAN TRANSMIX CO LLC	n-Hexane (110-54-3)	128.58
KINDER MORGAN TRANSMIX CO LLC	1,2,4-Trimethylbenzene (95-63-6)	114.51
KINDER MORGAN TRANSMIX CO LLC	Ethylbenzene (100-41-4)	34.03
KINDER MORGAN TRANSMIX CO LLC	Cumene (98-82-8)	8.36
CARPENTER CO RICHMOND PLANT	Toluenediisocyanate (26471-62-5)	1,703.80
CARPENTER CO RICHMOND PLANT	Diisocyanates (N120)	584
CARPENTER CO RICHMOND PLANT	Ethylene glycol (107-21-1)	19

14. 24089 - Fieldale

Total Air Releases: 246,305 (lbs.)

Population: 2,440

Median Household Income: \$46,184

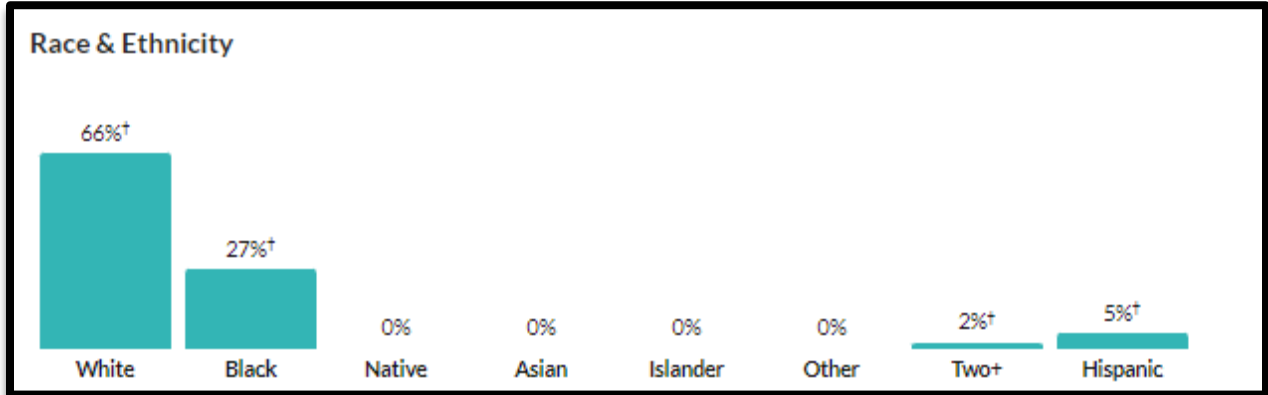


Table 28: 24089 Chemical Releases by Facilities

Facility	Chemical	Air releases (lbs.)
EASTMAN PERFORMANCE FILMS LLC - PLANT II	N-methyl-2-pyrrolidone (872-50-4)	129,494.00
EASTMAN PERFORMANCE FILMS LLC - PLANT II	Ethylene glycol (107-21-1)	100,200.00
EASTMAN PERFORMANCE FILMS LLC - PLANT II	Toluene (108-88-3)	9,449.00
EASTMAN PERFORMANCE FILMS LLC - PLANT 1	Toluene (108-88-3)	3,349.00

Air Toxins and Health Risks

EASTMAN PERFORMANCE FILMS LLC - PLANT II	Methyl isobutyl ketone (108-10-1)	1,680.00
EASTMAN PERFORMANCE FILMS LLC - PLANT II	n-Hexane (110-54-3)	1,386.00
EASTMAN PERFORMANCE FILMS LLC - PLANT II	Acrylic acid (79-10-7)	747

15. 24124 - Narrows

Total Air Releases: 192,239.68 (lbs.)

Population: 1,208

Median Household Income: \$48,583

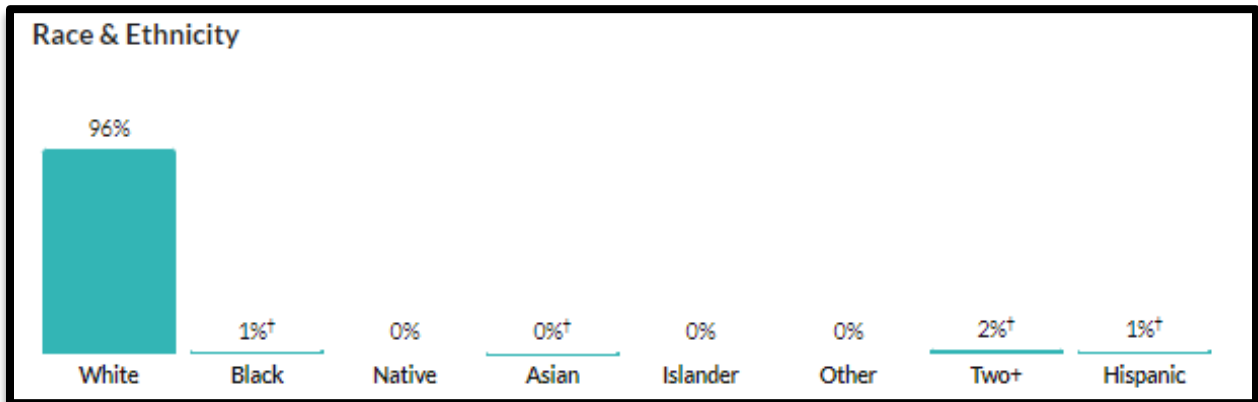


Table 29: 24124 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
CELANESE ACETATE LLC - CELCO PLANT	Cyclohexane (110-82-7)	127,675.00
CELANESE ACETATE LLC - CELCO PLANT	Dichloromethane (75-09-2)	29,625.00
CELANESE ACETATE LLC - CELCO PLANT	Ammonia (7664-41-7)	27,952.00
CELANESE ACETATE LLC - CELCO PLANT	Acetonitrile (75-05-8)	3,430.40
CELANESE ACETATE LLC - CELCO PLANT	Ethylene (74-85-1)	3,055.00
CELANESE ACETATE LLC - CELCO PLANT	1,3-Butadiene (106-99-0)	500
CELANESE ACETATE LLC - CELCO PLANT	Mercury (7439-97-6)	2.28

16. 24534 - Clover

Total Air Releases: 186,630.40 (lbs.)

Population: 1,208

Median Household Income: \$34,654

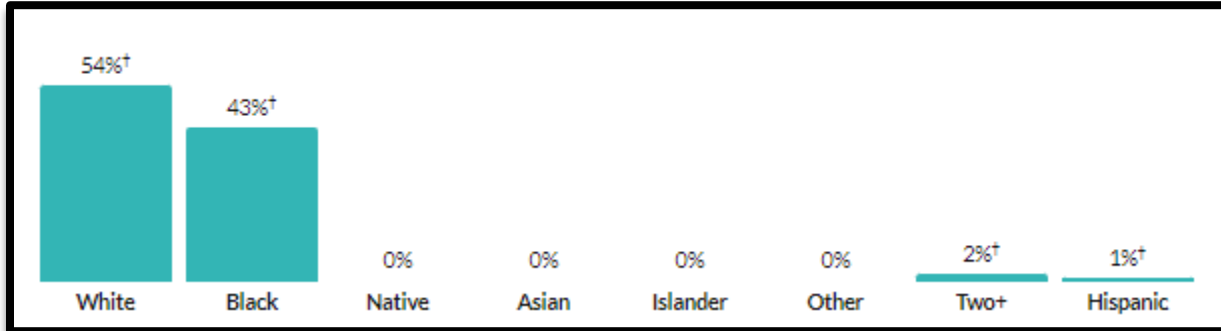


Table 30: 24534 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
CLOVER POWER STATION	Sulfuric acid (7664-93-9)	179,000.00
CLOVER POWER STATION	Hydrochloric acid (7647-01-0)	4,920.00
CLOVER POWER STATION	Hydrogen fluoride (7664-39-3)	2,460.00
CLOVER POWER STATION	Manganese compounds (N450)	184
CLOVER POWER STATION	Vanadium compounds (N770)	59
CLOVER POWER STATION	Lead compounds (N420)	5.3
CLOVER POWER STATION	Mercury compounds (N458)	1

17. 24592 - South Boston

Total Air Releases: 179,188.00 (lbs.)

Population: 13,342

Median Household Income: \$44,707

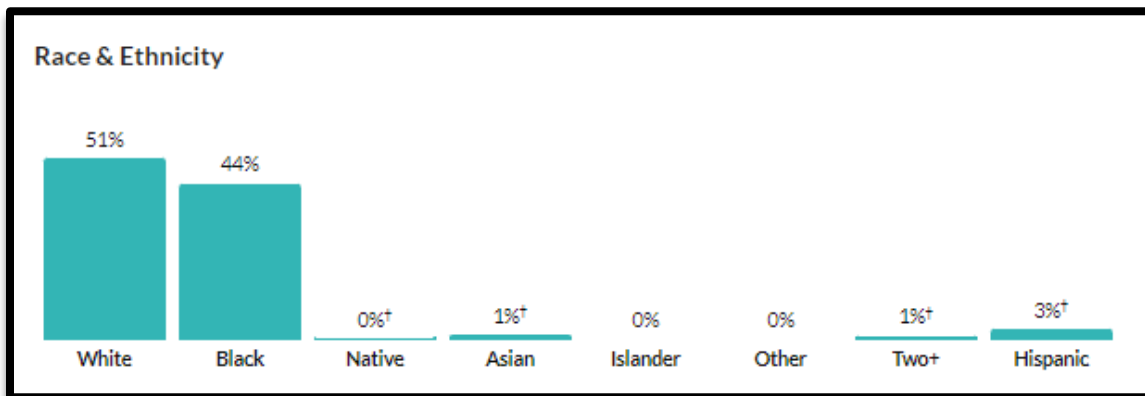


Table 31: 24592 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
AQUATIC CO	Styrene (100-42-5)	169,004.00
AQUATIC CO	Methyl methacrylate (80-62-6)	10,000.00
ABB ENTERPRISE SOFTWARE INC	Copper (7440-50-8)	147
ABB ENTERPRISE SOFTWARE INC	Manganese (7439-96-5)	23
ABB ENTERPRISE SOFTWARE INC	Chromium (7440-47-3)	2
ABB ENTERPRISE SOFTWARE INC	Nickel (7440-02-0)	2
VOESTALPINE HIGH PERFORMANCE METALS - SOUTH BOSTON PLANT	Methanol (67-56-1)	10

18. 24283 - Saint Paul

Total Air Releases: 142,176.06 (lbs.)

Population: 2,130

Median Household Income: \$33,559

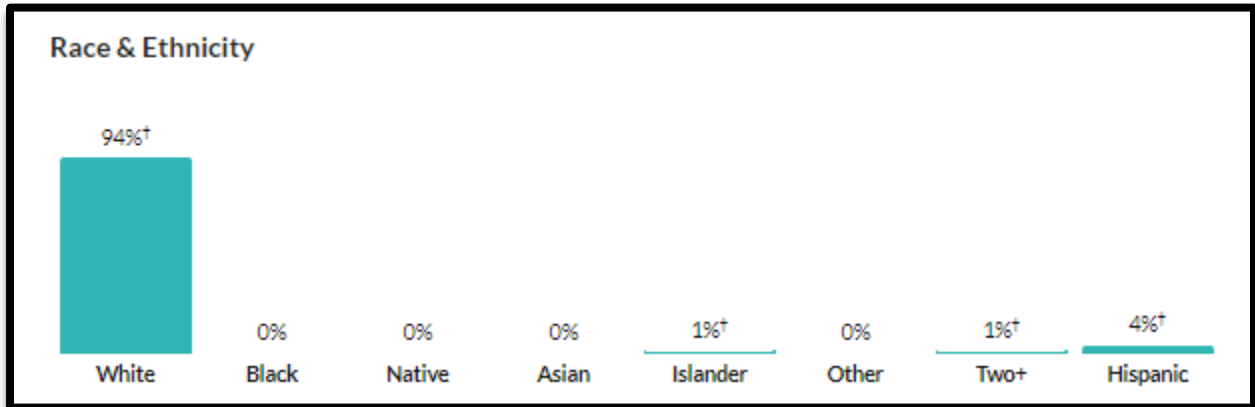


Table 32: 24283 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
VIRGINIA CITY HYBRID ENERGY CENTER	Hydrochloric acid (7647-01-0)	65,600.00
VIRGINIA CITY HYBRID ENERGY CENTER	Ammonia (7664-41-7)	64,700.00

Air Toxins and Health Risks

VIRGINIA CITY HYBRID ENERGY CENTER	Manganese compounds (N450)	5,490.00
VIRGINIA CITY HYBRID ENERGY CENTER	Sulfuric acid (7664-93-9)	3,690.00
VIRGINIA CITY HYBRID ENERGY CENTER	Zinc compounds (N982)	1,440.00
VIRGINIA CITY HYBRID ENERGY CENTER	Barium compounds (N040)	581
VIRGINIA CITY HYBRID ENERGY CENTER	Lead compounds (N420)	169.7
VIRGINIA CITY HYBRID ENERGY CENTER	Copper compounds (N100)	168
VIRGINIA CITY HYBRID ENERGY CENTER	Hydrogen fluoride (7664-39-3)	126
VIRGINIA CITY HYBRID ENERGY CENTER	Nickel compounds (N495)	126
VIRGINIA CITY HYBRID ENERGY CENTER	Chromium compounds (N090)	82
VIRGINIA CITY HYBRID ENERGY CENTER	Vanadium compounds (N770)	3.3

19. 22201 - Arlington

Total Air Releases: 138,514.40

Population: 38,541

Median Household Income: \$126,632

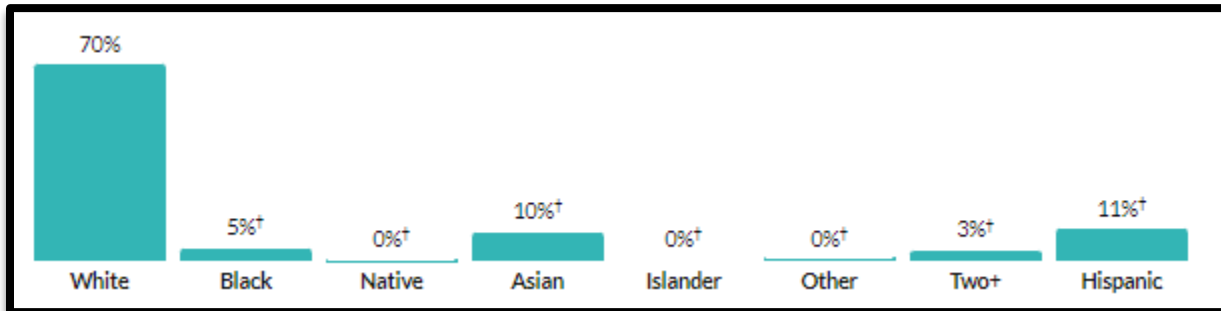


Table 33: 22201 Chemical Releases by Facilities in

Facility	Chemical	Air Releases (lbs.)
PENTAGON RESERVATION	Naphthalene (91-20-3)	34,560.00
PENTAGON RESERVATION	1,2,4-Trimethylbenzene (95-63-6)	34,559.00
PENTAGON RESERVATION	Biphenyl (92-52-4)	34,559.00
PENTAGON RESERVATION	Cumene (98-82-8)	17,280.00
PENTAGON RESERVATION	Ethylbenzene (100-41-4)	17,280.00
PENTAGON RESERVATION	Lead compounds (N420)	276.00

20. 23231 - Richmond, Henrico Area

Total Air Releases: 127,453.00 (lbs.)

Population: 36,564

Median Household Income: \$56,872

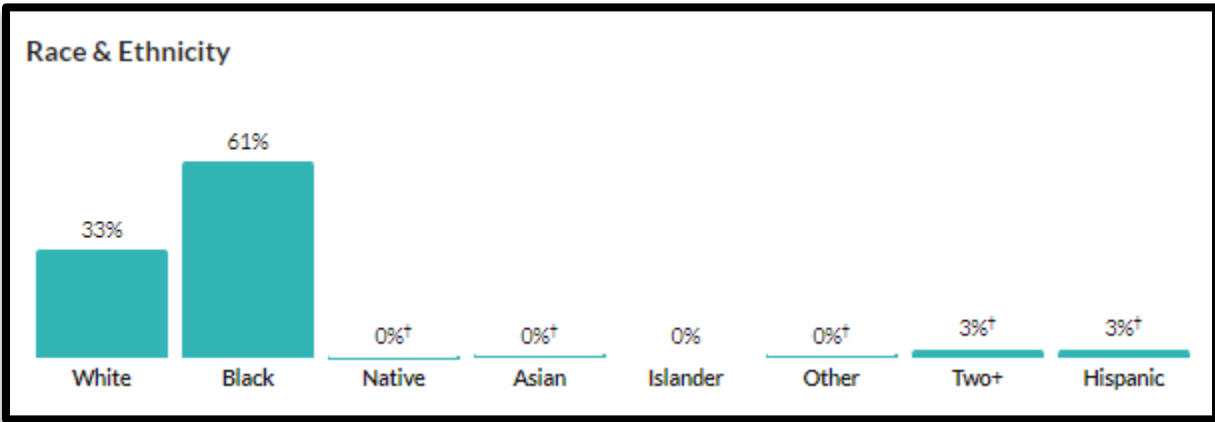


Table 34: 23221 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
MONDELEZ GLOBAL LLC	Ammonia (7664-41-7)	127,453.00
STERILIZATION SERVICES OF VIRGINIA	Ethylene oxide (75-21-8)	3,557.00

21. 24141 - Radford

Total Air Releases: 125,343.73 (lbs.)

Population: 22,989

Median Household Income: \$48,664

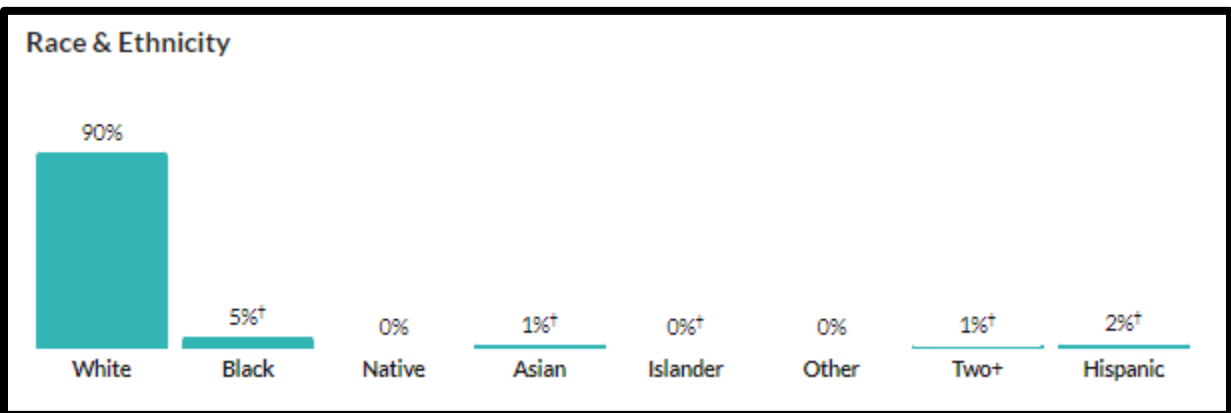


Table 35: 24141 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
US ARMY RADFORD ARMY AMMUNITION PLANT	Nitroglycerin (55-63-0)	66,543.00
US ARMY RADFORD ARMY AMMUNITION PLANT	Ammonia (7664-41-7)	19,294.00
US ARMY RADFORD ARMY AMMUNITION PLANT	Copper and copper compounds (N100)	2,320.00
US ARMY RADFORD ARMY AMMUNITION PLANT	Lead and lead compounds (N420)	1,461.00
US ARMY RADFORD ARMY AMMUNITION PLANT	Nitric acid (7697-37-2)	1,391.70
US ARMY RADFORD ARMY AMMUNITION PLANT	Dibutyl phthalate (84-74-2)	9.50
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Nitroglycerin (55-63-0)	33,693.00
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Diphenylamine (122-39-4)	447.00
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Nitrate compounds (N511)	180.00
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Lead and lead compounds (N420)	4.50

22. 23944 - Kenbridge

Total Air Releases: 112,220.00 (lbs.)

Population: 3,096

Median Household Income: \$43,267

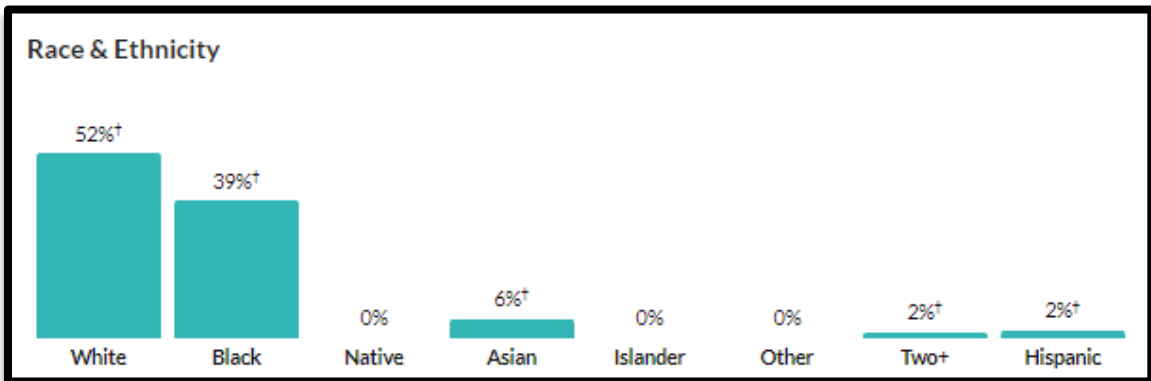


Table 36: 23944 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
VIRGINIA MARBLE MANUFACTURERS INC	Styrene (100-42-5)	112,220.00

23. 23607 - Newport News

Total Air Releases: 99,356.62 (lbs.)

Population: 23,067

Median Household Income: \$33,099

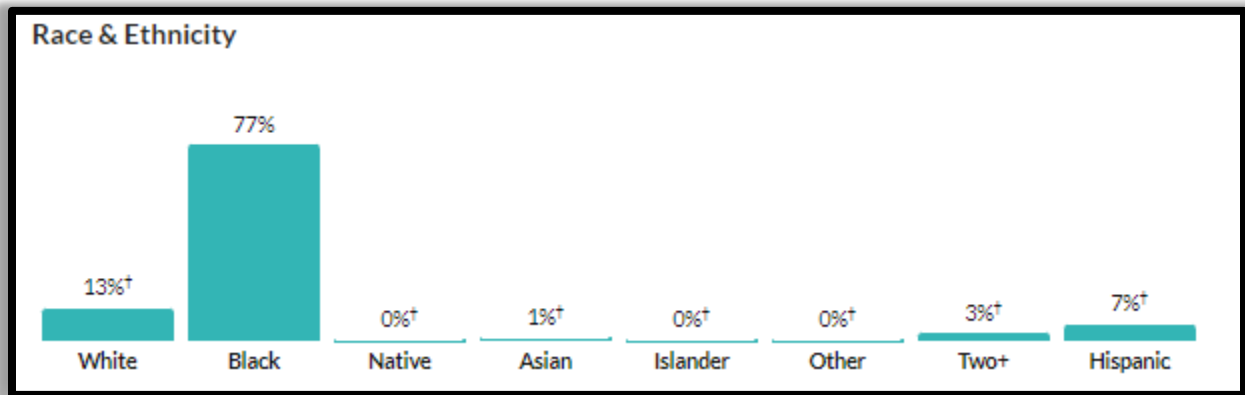


Table 37: 23607 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
HUNTINGTON INGALLS INC	n-Butyl alcohol (71-36-3)	34,603.97
HUNTINGTON INGALLS INC	Xylene (mixed isomers) (1330-20-7)	19,722.38
HUNTINGTON INGALLS INC	1,2,4-Trimethylbenzene (95-63-6)	12,345.91
HUNTINGTON INGALLS INC	Manganese (7439-96-5)	1,018.24
HUNTINGTON INGALLS INC	Copper and copper compounds (N100)	457.18
HUNTINGTON INGALLS INC	Nickel (7440-02-0)	263.85
HUNTINGTON INGALLS INC	Chromium (7440-47-3)	128.40
HUNTINGTON INGALLS INC	Zinc compounds (N982)	126.80
HUNTINGTON INGALLS INC	Lead (7439-92-1)	1.79
MICA CO OF CANADA INC	Methanol (67-56-1)	17,615.00
MICA CO OF CANADA INC	Toluene (108-88-3)	13,072.00
BKEP MATERIALS LLC -- NEWPORT NEWS VA	Polycyclic aromatic compounds (N590)	1.10

24. 24539 - Crystal Hill

Total Air Releases: 94,402.00

Population: 80

Median Household Income: \$34,904

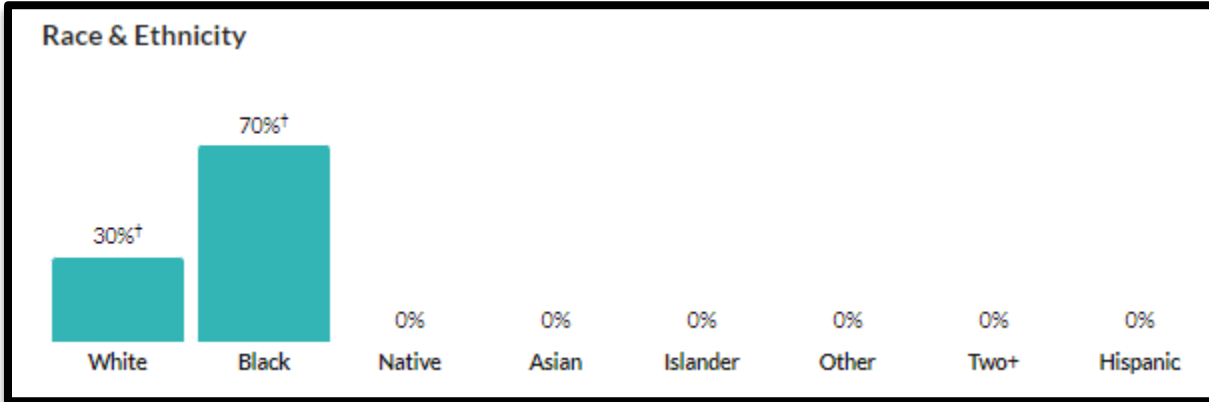


Table 38: 24539 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
HUBER ENGINEERED WOODS LLC	Methanol (67-56-1)	42,620.00
HUBER ENGINEERED WOODS LLC	Phenol (108-95-2)	16,438.00
HUBER ENGINEERED WOODS LLC	Formaldehyde (50-00-0)	16,345.00
HUBER ENGINEERED WOODS LLC	Acrolein (107-02-8)	12,877.00
HUBER ENGINEERED WOODS LLC	Acetaldehyde (75-07-0)	5,990.00
HUBER ENGINEERED WOODS LLC	Lead and lead compounds (N420)	78
HUBER ENGINEERED WOODS LLC	Diisocyanates (N120)	54

25. 24540 - Danville

Total Air Releases: 90,090.50 (lbs.)

Population: 31,607

Median Household Income: \$40,280

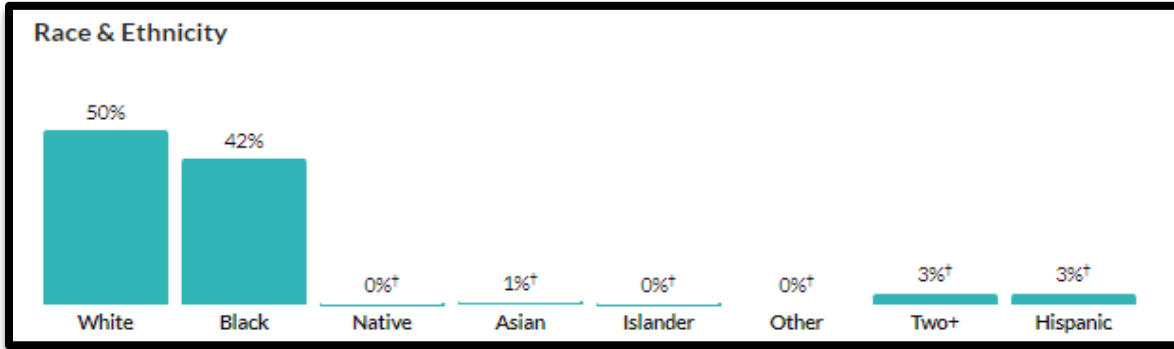


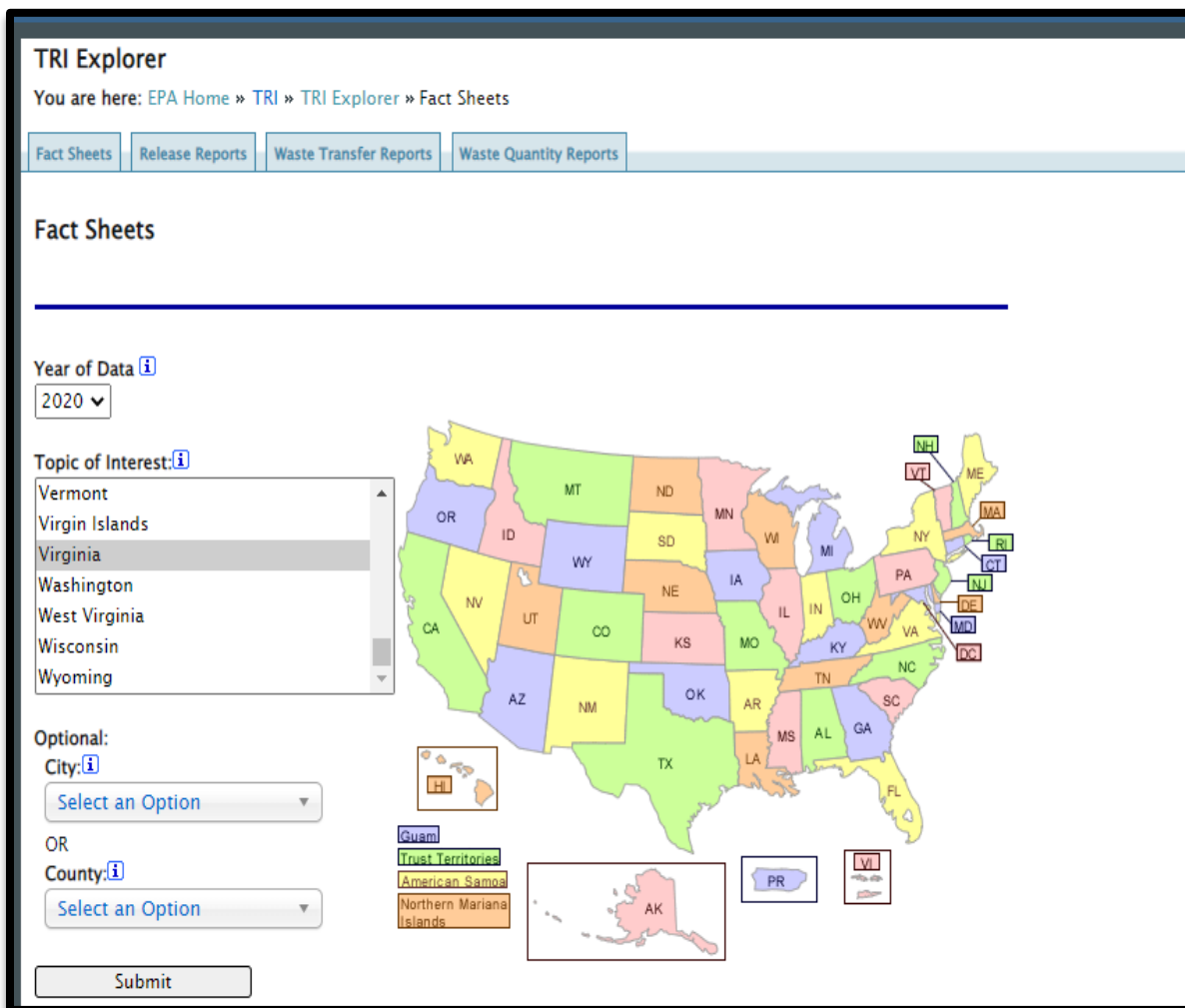
Table 39: 24540 Chemical Releases by Facilities

Facility	Chemical	Air Releases (lbs.)
INTERTAPE POLYMER CORP	Toluene (108-88-3)	82,077.00
DANCHEM TECHNOLOGIES INC	n-Butyl alcohol (71-36-3)	4,400.80
DANCHEM TECHNOLOGIES INC	Toluene (108-88-3)	2,934.00
DANCHEM TECHNOLOGIES INC	Xylene (mixed isomers) (1330-20-7)	524.5
DANCHEM TECHNOLOGIES INC	Maleic anhydride (108-31-6)	154.2

Tools to Find Data on Toxics

The public has greater access to information about toxic releases than ever before. While our toxics report predominantly relied on three main researching tools found in figures 1-3, a multitude of additional free resources exists. Figures 5 - X describe online tools the public can use to better understand how toxics may be impacting their communities and health. Although our report focuses on air, these tools can be used to find information on pollution affecting water and land.

Figure 5: [TRI Explorer](#)



TRI Explorer is an online tool that enables users to generate expansive reports related to toxic releases. This tool is helpful in getting macro-level insights related to the impact of

chemicals, facilities, and industry. Users can search zip codes and receive information about the number of facilities in the area as well as the total releases of TRI chemicals.

Figure 6: [TRI Search](#)

The screenshot shows the TRI Search web application interface. At the top, the title "TRI Search" is displayed in a large, bold, black font. Below the title is a navigation menu with links: Home, Multisystem Search, Topic Searches, System Data Searches, About the Data, Data Downloads, Widgets, Services, Mobile, and Other Datasets. A red header bar with the TRI logo is visible below the navigation menu. The main content area is titled "Facility Selection" and contains a search form. The form includes a "Facility Identification:" label followed by a dropdown menu with the placeholder text "Facility Name (Enter a partial or complete Facility Name)". Below this is a "Facility Identification Option Value:" label followed by an empty text input field. There are three radio button options: "Beginning With" (selected), "Exact Match", and "Containing". A horizontal line separates this section from the "Geography Search" section. The "Geography Search" section has a heading and a paragraph of instructions: "Enter a partial value for any geography option except for the state value. For city and county, you must enter the state value. We strongly recommend that you enter a small geographical area to begin the search since Envirofacts contains a large number of facilities." Below the instructions are two input fields: "ZIP Code:" followed by a text input field, and "Address:" followed by a text input field.

TRI Search

[Home](#) | [Multisystem Search](#) | [Topic Searches](#) | [System Data Searches](#) | [About the Data](#) | [Data Downloads](#) | [Widgets](#) | [Services](#) | [Mobile](#) | [Other Datasets](#)

TRI

Facility Selection

Facility Identification:

Facility Identification Option Value:

Beginning With Exact Match Containing

Geography Search

Enter a partial value for any geography option except for the state value. For city and county, you must enter the state value. We strongly recommend that you enter a small geographical area to begin the search since Envirofacts contains a large number of facilities.

ZIP Code:

Address:

Air Toxins and Health Risks

TRI search is helpful if users have some basic information about chemicals or facilities of concern. Entering a search term will lead to spreadsheets with detailed information about the chemical releases of a facility or geographic region.

Figure 7: [Envirofacts](#)



Envirofacts is probably the most comprehensive tool offered by the EPA. TRI releases is a key component, but this tool allows users to find information about pollution levels, clean-up projects, air and water quality, and more by zip code. Envirofacts is also helpful in generating interactive maps that detail environmental topics.

Appendices

How does your locality rank in RSEI Scores?

Mitigating the potential health risks in Virginia’s communities will always start with public pressure on decision-makers. State level improvements in policies and appropriate accountability over polluting facilities are necessary to reduce Virginia’s national RSEI ranking. However, local advocacy is required to ensure leaders at all levels of government understand that environmental protections and public health are two sides of the same coin. Appendix one and two provide details about local scores in all of Virginia's localities.

Appendix 1: 2019 RSEI Scores by County⁴¹

Rank	County	RSEI Score	RSEI Score-Cancer	Number of RSEI Scoring Facilities
1	RICHMOND (CITY)	3,420,001	3,380,067	5
2	MONTGOMERY	3,089,055	0	4
3	HOPEWELL (CITY)	1,401,313	1,390,648	6
4	ARLINGTON	160,352	147,665	4
5	NEWPORT NEWS (CITY)	141,743	140,108	6
6	PRINCE GEORGE	135,705	0	1
7	NORFOLK (CITY)	72,184	71,782	6
8	CHESTERFIELD	55,304	46,109	12
9	GREENSVILLE	30,559	30,461	2

⁴¹ Data derived from EPA’s EasyRSEI Dashboard (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

Air Toxins and Health Risks

10	HAMPTON (CITY)	26,312	26,240	3
11	SUFFOLK (CITY)	22,544	22,046	2
12	HALIFAX	9,998	3,194	4
13	HARRISONBURG (CITY)	9,664	8,640	1
14	ISLE OF WIGHT	9,573	3,197	2
15	LOUDOUN	7,997	7,800	6
16	LYNCHBURG (CITY)	6,366	5,146	5
17	DANVILLE (CITY)	5,259	5,258	2
18	ROANOKE (CITY)	4,439	3,888	6
19	FAIRFAX (CITY)	4,356	4,341	1
20	COVINGTON (CITY)	3,955	1,729	2
21	RUSSELL	3,346	3,322	1
22	JAMES CITY	2,919	138	5
23	CAMPBELL	2,847	2,840	2
24	DINWIDDIE	2,766	2,460	3
25	FREDERICK	2,671	2,608	3
26	PRINCE WILLIAM	2,544	1,136	3
27	BUCHANAN	2,508	0	1
28	KING WILLIAM	2,325	1,777	1
29	BEDFORD	1,721	947	2
30	HANOVER	1,601	1,467	4

Air Toxins and Health Risks

31	PORTSMOUTH (CITY)	1,408	948	4
32	AUGUSTA	1,397	0	9
33	WASHINGTON	891	300	7
34	VIRGINIA BEACH (CITY)	868	837	3
35	ROANOKE	819	116	6
36	BRISTOL (CITY)	795	654	2
37	ACCOMACK	780	0	3
38	WISE	752	664	1
39	WARREN	744	633	2
40	RICHMOND	662	561	3
41	AMHERST	635	635	1
42	WESTMORELAND	538	489	1
43	BOTETOURT	533	27	6
44	HENRY	526	0	5
45	SOUTHAMPTON	452	0	1
46	PITTSYLVANIA	443	62	6
47	PETERSBURG (CITY)	402	55	4
48	CHESAPEAKE (CITY)	379	0	2
49	ROCKINGHAM	243	0	3
50	GILES	238	197	2
51	WINCHESTER (CITY)	233	141	1

Air Toxins and Health Risks

52	ALEXANDRIA (CITY)	171	171	1
53	SMYTH	171	170	1
54	SHENANDOAH	159	56	3
55	YORK	112	33	3
56	FAIRFAX	96	2	4
57	BUCKINGHAM	60	60	2
58	SPOTSYLVANIA	58	0	2
59	HENRICO	51	0	4
60	SCOTT	48	0	48
61	CULPEPER	47	27	3
62	STAFFORD	22	0	1
63	NOTTOWAY	21	0	2
64	PULASKI	19	14	1
65	CAROLINE	18	0	2
66	ROCKBRIDGE	16	14	2
67	CLARKE	10	8	1
68	MECKLENBURG	3	0	1
68	CHARLOTTE	3	0	1
68	LUNENBURG	3	0	1
69	ALBEMARLE	2	0	1
69	WYTHE	2	0	1
69	SALEM (CITY)	2	0	2

Air Toxins and Health Risks

70	KING GEORGE	1	0	1
70	COLONIAL HEIGHTS (CITY)	1	0	1
71	FAUQUIER	0	0	0
71	CARROLL	0	0	0
71	LEE	0	0	0
71	BRUNSWICK	0	0	0
71	NORTHUMBERLAND	0	0	0
71	BUENA VISTA (CITY)	0	0	0
71	LOUISA	0	0	0
71	SUSSEX	0	0	0
71	FALLS CHURCH (CITY)	0	0	0
71	GLOUCESTER	0	0	0
71	NEW KENT	0	0	0
71	GOOCHLAND	0	0	0

Appendix 2: RSEI Scores By Chemical from Facilities in Virginia⁴²

Facility	Chemical	RSEI Score	RSEI Cancer	County
STERILIZATION SERVICES OF VIRGINIA	Ethylene oxide	3,367,796	3,367,796	RICHMOND (CITY)
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Nitroglycerin	2,602,460	0	MONTGOMERY

⁴² Appendix data derived from EPA's online EasyRSEI Dashboard (<https://edap.epa.gov/public/extensions/EasyRSEI/EasyRSEI.html#analysis>)

Air Toxins and Health Risks

ASHLAND SPECIALTY INGREDIENTS GP	Ethylene oxide	1,320,125	1,320,125	HOPEWELL (CITY)
US ARMY RADFORD ARMY AMMUNITION PLANT	Nitroglycerin	485,115	0	MONTGOMERY
PENTAGON RESERVATION	Naphthalene	138,316	138,316	ARLINGTON
METL-SPAN A DIV OF NCI GROUP INC	Diisocyanates	135,705	0	PRINCE GEORGE
HUNTINGTON INGALLS INC	Chromium	112,348	112,348	NEWPORT NEWS (CITY)
BAE SYSTEMS NORFOLK SHIP REPAIR	Chromium compounds	71,666	71,666	NORFOLK (CITY)
EVONIK INDUSTRIES	Ethylene oxide	48,526	48,526	HOPEWELL (CITY)
CARPENTER CO RICHMOND PLANT	Diisocyanates	36,629	0	RICHMOND (CITY)
HUNTINGTON INGALLS INC	Nickel	27,733	27,733	NEWPORT NEWS (CITY)
STEELFAB OF VIRGINIA INC	Chromium	24,960	24,960	GREENSVILLE
SPRUANCE PLANT	Chloroform	24,068	24,068	CHESTERFIELD
DUPONT TEIJIN FILMS	Acetaldehyde	21,258	21,258	CHESTERFIELD
SOLENIS LLC	Acrylonitrile	20,050	20,050	SUFFOLK (CITY)
CARPENTER CO RICHMOND PLANT	Toluene Diisocyanate	14,843	11,577	RICHMOND (CITY)
HOWMET CASTINGS & SERVICES INC	Cobalt	14,717	14,717	HAMPTON (CITY)
ADVANSIX INC HOPEWELL PLANT	Benzene	14,326	14,326	HOPEWELL (CITY)
HOWMET CASTINGS & SERVICES INC	Chromium	10,125	10,125	HAMPTON (CITY)
PENTAGON RESERVATION	Biphenyl	9,685	0	ARLINGTON
ADVANSIX INC HOPEWELL PLANT	Sulfuric acid	9,637	0	HOPEWELL (CITY)
HUBER ENGINEERED WOODS LLC	Acrolein	6,541	0	HALIFAX
STEELFAB OF VIRGINIA INC	Nickel	5,501	5,501	GREENSVILLE
PENTAGON RESERVATION	Ethylbenzene	5,390	5,390	ARLINGTON

Air Toxins and Health Risks

SLOCUM ADHESIVES CORP	Trichloroethylene	5,106	5,106	LYNCHBURG (CITY)
AMERICAN PHOENIX INC	Cobalt compounds	4,860	4,860	DANVILLE (CITY)
DRIV	Cobalt	4,512	4,512	HARRISONBURG (CITY)
CHESTERFIELD POWER STATION	Sulfuric acid	4,426	0	CHESTERFIELD
CITGO FAIRFAX TERMINAL	Benzene	4,291	4,291	FAIRFAX (CITY)
ASHLAND SPECIALTY INGREDIENTS GP	Propylene oxide	4,212	4,212	HOPEWELL (CITY)
DRIV	Chromium	3,881	3,881	HARRISONBURG (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Hydrogen sulfide	3,514	0	ISLE OF WIGHT
STEEL DYNAMICS INC ROANOKE BAR DIV	Chromium compounds	3,241	3,241	ROANOKE (CITY)
SAMUEL SON & CO (USA) INC	Chromium	3,238	3,238	RUSSELL
MENZIES AVIATION FUELING OPERATIONS	Chromium	2,856	2,856	LOUDOUN
TREX - VIRGINIA MANUFACTURING OPERATIONS	Chromium compounds	2,608	2,608	FREDERICK
MENZIES AVIATION FUELING OPERATIONS	Arsenic	2,599	2,599	LOUDOUN
BALL METAL BEVERAGE CONTAINER CORP	Glycol ethers	2,578	0	JAMES CITY
ALLIED AVIATION FUELING CO INC	Benzene	2,550	2,550	ARLINGTON
SMITHFIELD FRESH MEATS CORP SMITHFIELD FACILITY	Hydrogen sulfide	2,342	0	ISLE OF WIGHT
HUBER ENGINEERED WOODS LLC	Formaldehyde	2,292	2,292	HALIFAX
PENTAGON RESERVATION	Lead compounds	2,283	0	ARLINGTON
VEOLIA JAMES RIVER PLANT	Sulfuric acid	2,015	0	CHESTERFIELD

Air Toxins and Health Risks

JEWELL COKE CO LP	Sulfuric acid	2,009	0	BUCHANAN
SOLENIS LLC	Acrylamide	1,996	1,996	SUFFOLK (CITY)
WESTROCK VIRGINIA CORP	Hydrogen sulfide	1,940	0	COVINGTON (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Formaldehyde	1,686	1,686	ISLE OF WIGHT
DOSWELL LP	Naphthalene	1,467	1,467	HANOVER
INTERNATIONAL PAPER FRANKLIN MILL	Acetaldehyde	1,442	1,442	ISLE OF WIGHT
CHAPARRAL (VA) INC	Chromium compounds	1,389	1,389	DINWIDDIE
HUNTINGTON INGALLS INC	Manganese	1,381	0	NEWPORT NEWS (CITY)
CHESTERFIELD POWER STATION	Hydrochloric acid	1,341	0	CHESTERFIELD
ALLIED AVIATION FUELING CO INC	Naphthalene	1,306	1,306	ARLINGTON
HOWMET CASTINGS & SERVICES INC	Nickel	1,288	1,288	HAMPTON (CITY)
WESTROCK CP LLC	Formaldehyde	1,196	1,196	KING WILLIAM
BWXT NUCLEAR OPERATIONS GROUP INC	Nickel compounds	1,158	1,158	CAMPBELL
US ARMY RADFORD ARMY AMMUNITION PLANT	Lead compounds	1,132	0	MONTGOMERY
WESTROCK CP LLC	Formaldehyde	1,131	1,131	HOPEWELL (CITY)
U.S. MARINE CORPS BASE QUANTICO (ENTIRE FACILITY)	Benzene	1,123	1,123	PRINCE WILLIAM
GEORGIA-PACIFIC WOOD PRODUCTS LLC - BROOKNEAL OSB	Formaldehyde	1,037	1,037	CAMPBELL
WESTROCK VIRGINIA CORP	Acetaldehyde	1,028	1,028	COVINGTON (CITY)
DRIV	Manganese	1,024	0	HARRISONBURG (CITY)
ADVANSIX INC HOPEWELL PLANT	Polycyclic aromatic compounds	973	973	HOPEWELL (CITY)

Air Toxins and Health Risks

GEORGIA-PACIFIC BIG ISLAND MILL	Acetaldehyde	947	947	BEDFORD
US NAVY DEFENSE FUEL SUPPORT POINT CRANEY ISLAND	Naphthalene	927	927	PORTSMOUTH (CITY)
MENZIES AVIATION FUELING OPERATIONS	Beryllium	867	867	LOUDOUN
ADVANSIX INC HOPEWELL PLANT	Acetaldehyde	856	856	HOPEWELL (CITY)
US NAVY NAVAL AIR STATION OCEANA BASE	Naphthalene	837	837	VIRGINIA BEACH (CITY)
ABB ENTERPRISE SOFTWARE INC	Chromium	713	713	HALIFAX
PERDUE FARMS ACCOMAC PROCESSING PLANT	Hydrogen sulfide	708	0	ACCOMACK
SPRUANCE PLANT	Polycyclic aromatic compounds	707	707	CHESTERFIELD
KINDER MORGAN TRANSMIX CO LLC	Benzene	689	689	RICHMOND (CITY)
NIBCO OF VIRGINIA INC	Copper	682	0	AUGUSTA
ASSOCIATED ASPHALT BRISTOL LLC	Polycyclic aromatic compounds	654	654	BRISTOL (CITY)
MENZIES AVIATION FUELING OPERATIONS	Benzene	649	649	LOUDOUN
PENTAGON RESERVATION	1,2,4-Trimethylbenzene	645	0	ARLINGTON
GREIF PACKAGING LLC	Acetaldehyde	635	635	AMHERST
BWXT NUCLEAR OPERATIONS GROUP INC	Chromium compounds	594	594	CAMPBELL
ALERIS ROLLED PRODUCTS INC	Aluminum (fume or dust)	585	0	CHESTERFIELD
VIRGINIA CITY HYBRID ENERGY CENTER	Chromium compounds	560	560	WISE
U.S. MARINE CORPS BASE QUANTICO (ENTIRE FACILITY)	Lead compounds	547	0	PRINCE WILLIAM
CHAPARRAL (VA) INC	Nickel compounds	546	546	DINWIDDIE

Air Toxins and Health Risks

WESTROCK VIRGINIA CORP	Formaldehyde	537	537	COVINGTON (CITY)
TMS INTERNATIONAL LLC	Nickel compounds	526	526	DINWIDDIE
HAPCO	Aluminum (fume or dust)	524	0	WASHINGTON
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Chromium compounds	513	513	WARREN
MENZIES AVIATION FUELING OPERATIONS	Naphthalene	508	508	LOUDOUN
MICRON TECHNOLOGY INC	Sulfuric acid	503	0	PRINCE WILLIAM
WESTROCK CP LLC	Hydrogen sulfide	492	0	KING WILLIAM
WESTROCK CP LLC	Acetaldehyde	453	453	KING WILLIAM
CARRY-ON TRAILER CORP	Chromium	442	442	WESTMORELAND
SOLENIS LLC	1,2-Dichloropropane	424	0	SOUTHAMPTON
CAMERON CHEMICAL INC	Manganese compounds	422	0	SUFFOLK (CITY)
PINE PRODUCTS INC	Lead	420	0	HENRY
THE LYCRA CO LLC	Diisocyanates	412	0	AUGUSTA
CUSTOM TRUCK ONE SOURCE	Manganese	405	0	BEDFORD
THE GOODYEAR TIRE & RUBBER CO	Cobalt compounds	388	388	DANVILLE (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Chlorine	383	0	ISLE OF WIGHT
WESTROCK CP LLC	Acetaldehyde	377	377	HOPEWELL (CITY)
PERDUE AGRIBUSINESS LLC-CHESAPEAKE VA	n-Hexane	373	0	CHESAPEAKE (CITY)
STEEL DYNAMICS INC ROANOKE BAR DIV	Manganese compounds	363	0	ROANOKE (CITY)
JEWELL COKE CO LP	Hydrochloric acid	359	0	BUCHANAN
GEORGIA-PACIFIC BIG ISLAND MILL	Hydrogen sulfide	354	0	BEDFORD

Air Toxins and Health Risks

NEW MILLENNIUM BUILDING SYSTEMS	Glycol ethers	350	0	ROANOKE
ADVANSIX INC HOPEWELL PLANT	Ammonia	350	0	HOPEWELL (CITY)
GRIFFIN PIPE PRODUCTS CO	Lead compounds	349	0	LYNCHBURG (CITY)
BLEACHTECH LLC	Chlorine	346	0	PETERSBURG (CITY)
GRIFFIN PIPE PRODUCTS CO	Manganese compounds	333	0	LYNCHBURG (CITY)
ROANOKE CEMENT CO LLC	Sulfuric acid	328	0	BOTETOURT
PARKER HANNIFIN INTEGRATED SEALS DIV	Lead compounds	327	0	LYNCHBURG (CITY)
MICRON TECHNOLOGY INC	Hydrogen fluoride	320	0	PRINCE WILLIAM
FEDERAL MOGUL POWERTRAIN LLC	Aluminum (fume or dust)	291	0	MONTGOMERY
UTILITY TRAILER MANUFACTURING CO	Chromium	290	290	WASHINGTON
STELLA-JONES CORP	Arsenic compounds	288	288	RICHMOND
AKZO NOBEL COATINGS INC	Ethylbenzene	287	287	ROANOKE (CITY)
MENZIES AVIATION FUELING OPERATIONS	Cadmium	282	282	LOUDOUN
STELLA-JONES CORP	Chromium compounds	273	273	RICHMOND
DRIV	Nickel	247	247	HARRISONBURG (CITY)
NEW MILLENNIUM BUILDING SYSTEMS	Manganese	240	0	ROANOKE
LSC COMMUNICATIONS / HARRISONBURG N	Glycol ethers	236	0	ROCKINGHAM
CHESTERFIELD POWER STATION	Hydrogen fluoride	233	0	CHESTERFIELD
BALL ADVANCED ALUMINUM TECHNOLOGIES CORP	Aluminum (fume or dust)	212	0	AUGUSTA
U.S. NAVY NORFOLK NAVAL SHIPYARD	Copper compounds	196	0	PORTSMOUTH (CITY)

Air Toxins and Health Risks

ASSOCIATED ASPHALT ROANOKE LLC	Polycyclic aromatic compounds	195	195	ROANOKE (CITY)
CELANESE ACETATE LLC - CELCO PLANT	1,3-Butadiene	190	190	GILES
CLOVER POWER STATION	Sulfuric acid	179	0	HALIFAX
WESTROCK CP LLC	Hydrogen sulfide	175	0	HOPEWELL (CITY)
VIRGINIA PAVING ALEXANDRIA PLANT	Polycyclic aromatic compounds	171	171	ALEXANDRIA (CITY)
STEEL DYNAMICS INC ROANOKE BAR DIV	Nickel compounds	164	164	ROANOKE (CITY)
UTILITY TRAILER MANUFACTURING CO	Chromium	163	163	SMYTH
SUPERIOR CONCRETE MATERIALS INC - DULLES	Lead	159	0	LOUDOUN
CHURCH & DWIGHT CO INC	Ammonia	154	0	CHESTERFIELD
WESTROCK VIRGINIA CORP	Sulfuric acid	152	0	COVINGTON (CITY)
HUBER ENGINEERED WOODS LLC	Acetaldehyde	143	143	HALIFAX
U.S. NAVY NORFOLK NAVAL SHIPYARD	Xylene (mixed isomers)	143	0	PORTSMOUTH (CITY)
O'SULLIVAN FILMS INC	Di(2-ethylhexyl) phthalate	136	136	WINCHESTER (CITY)
HONEYWELL INTERNATIONAL COLONIAL HEIGHTS PLANT	Freon 113	136	0	CHESTERFIELD
COLONNA'S SHIPYARD INC	Xylene (mixed isomers)	128	0	NORFOLK (CITY)
JEWELL COKE CO LP	Lead compounds	128	0	BUCHANAN
GREYSTONE OF VIRGINIA INC	Chromium compounds	127	127	JAMES CITY
WESTROCK CP LLC	Polycyclic aromatic compounds	127	127	KING WILLIAM
ASHLAND SPECIALTY INGREDIENTS GP	tert-Butyl alcohol	124	0	HOPEWELL (CITY)
OWENS-BROCKWAY GLASS CONTAINER INC PLANT 26	Lead compounds	115	0	JAMES CITY

Air Toxins and Health Risks

BAE SYSTEMS NORFOLK SHIP REPAIR	Copper compounds	115	0	NORFOLK (CITY)
CHAPARRAL (VA) INC	Lead compounds	113	0	DINWIDDIE
STRONGWELL CORP BRISTOL	Antimony	106	0	BRISTOL (CITY)
VIRGINIA CITY HYBRID ENERGY CENTER	Nickel compounds	103	103	WISE
ROANOKE CEMENT CO LLC	Manganese compounds	103	0	BOTETOURT
SPRUANCE PLANT	CFC-11 (trichlorofluoromethane)	100	0	CHESTERFIELD
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Ethylbenzene	100	100	WARREN
OWENS-BROCKWAY GLASS CONTAINER INC PLANT 29	Lead compounds	99	0	PITTSYLVANIA
MONDELEZ GLOBAL LLC	Ammonia	98	0	RICHMOND
CHAPARRAL (VA) INC	Manganese compounds	97	0	DINWIDDIE
INGEVITY VIRGINIA CORP	Formaldehyde	94	94	COVINGTON (CITY)
LSC COMMUNICATIONS / STRASBURG	Glycol ethers	93	0	SHENANDOAH
INTERNATIONAL PAPER FRANKLIN MILL	Chlorine dioxide	92	0	ISLE OF WIGHT
EVONIK INDUSTRIES	Acrylic acid	89	0	HOPEWELL (CITY)
BALL METAL BEVERAGE CONTAINER CORP	n-Butyl alcohol	86	0	JAMES CITY
NORCRAFT COS	Glycol ethers	86	0	LYNCHBURG (CITY)
ALLIED AVIATION FUELING CO INC	Ethylbenzene	85	85	ARLINGTON
ARKEMA INC	Acrylic acid	84	0	PITTSYLVANIA
SAMUEL SON & CO (USA) INC	Nickel	84	84	RUSSELL
U.S. DOD, USAF, JOINT BASE LANGLEY EUSTIS - LANGLEY AFB	Naphthalene	84	84	HAMPTON (CITY)

Air Toxins and Health Risks

ASHLAND SPECIALTY INGREDIENTS GP	Nitric acid	78	0	HOPEWELL (CITY)
GRIFFIN PIPE PRODUCTS CO	Zinc compounds	75	0	LYNCHBURG (CITY)
STEEL DYNAMICS INC ROANOKE BAR DIV	Lead compounds	74	0	ROANOKE (CITY)
POLYNT COMPOSITES USA INC	Maleic anhydride	74	0	PITTSYLVANIA
HUNTINGTON INGALLS INC	Copper compounds	73	0	NEWPORT NEWS (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Polycyclic aromatic compounds	70	70	ISLE OF WIGHT
SUPERIOR CONCRETE MATERIALS INC - LORTON	Lead	70	0	FAIRFAX
ASSOCIATED ASPHALT HOPEWELL LLC	Polycyclic aromatic compounds	69	69	HOPEWELL (CITY)
BRANSCOME INC-NORFOLK WESTMINSTER	Polycyclic aromatic compounds	68	68	NORFOLK (CITY)
TYSON FARMS INC-TEMPERANCEVILLE	Peroxyacetic acid	67	0	ACCOMACK
YOKOHAMA TIRE MANUFACTURING VIRGINIA LLC	Zinc compounds	67	0	ROANOKE
O'SULLIVAN FILMS INC	Antimony compounds	66	0	WINCHESTER (CITY)
WESTROCK VIRGINIA CORP	Chlorine dioxide	65	0	COVINGTON (CITY)
WESTROCK VIRGINIA CORP	Polycyclic aromatic compounds	65	65	COVINGTON (CITY)
DUPONT TEIJIN FILMS	Polycyclic aromatic compounds	65	65	CHESTERFIELD
HUNTINGTON INGALLS INC	1,2,4-Trimethylbenzene	64	0	NEWPORT NEWS (CITY)
HUNTINGTON INGALLS INC	Xylene (mixed isomers)	64	0	NEWPORT NEWS (CITY)
EVONIK INDUSTRIES	Allyl alcohol	64	0	HOPEWELL (CITY)
DEGESCH AMERICA INC	Phosphine	63	0	AUGUSTA

Air Toxins and Health Risks

HUBER ENGINEERED WOODS LLC	Diisocyanates	62	0	HALIFAX
BLUE RIDGE FIBERBOARD	Polycyclic aromatic compounds	62	62	PITTSYLVANIA
AFETA CAMP PEARY	Lead	61	0	YORK
EASTMAN PERFORMANCE FILMS LLC - PLANT II	Acrylic acid	61	0	HENRY
KYANITE MINING CORP MULLITE PLANT	Polycyclic aromatic compounds	60	60	BUCKINGHAM
QG PRINTING II CORP	Glycol ethers	59	0	FREDERICK
CHAPARRAL (VA) INC	Mercury compounds	59	0	DINWIDDIE
VIRGINIA CITY HYBRID ENERGY CENTER	Manganese compounds	58	0	WISE
NEW MILLENNIUM BUILDING SYSTEMS	Nickel	58	58	ROANOKE
HOWMET CASTINGS & SERVICES INC	Nitric acid	57	0	HAMPTON (CITY)
ONDULINE NA	Glycol ethers	57	0	SPOTSYLVANIA
CABINETWORKS GROUP - MOUNT JACKSON PLANT	Ethylbenzene	56	56	SHENANDOAH
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Butyl acrylate	56	0	WARREN
PENTAGON RESERVATION	Cumene	53	0	ARLINGTON
DANCHEM TECHNOLOGIES INC	Maleic anhydride	53	0	PITTSYLVANIA
KOPPERS INC (ROANOKE)	Polycyclic aromatic compounds	52	52	ROANOKE
EVONIK INDUSTRIES	Propylene oxide	52	52	HOPEWELL (CITY)
ASHLAND SPECIALTY INGREDIENTS GP	Chloroacetic acid	51	0	HOPEWELL (CITY)
GEORGIA-PACIFIC WOOD PRODUCTS LLC - BROOKNEAL OSB	Acetaldehyde	51	51	CAMPBELL
U.S. NAVY NORFOLK NAVAL SHIPYARD	n-Butyl alcohol	50	0	PORTSMOUTH (CITY)

Air Toxins and Health Risks

PHILIP MORRIS USA PARK 500 SITE	Ammonia	50	0	CHESTERFIELD
CAMERON CHEMICAL INC	Copper compounds	49	0	SUFFOLK (CITY)
SOUTH ATLANTIC GALVANIZING LLC	Zinc compounds	49	0	HANOVER
TRIDENT AMERICAS	Copper compounds	48	0	CHESTERFIELD
CARRY-ON TRAILER CORP	Nickel	48	48	WESTMORELAN D
TEMPUR PRODUCTION USA INC	Diisocyanates	48	0	SCOTT
AMSTED RAIL CO INC	Chromium	47	47	PETERSBURG (CITY)
US NAVY NAVAL STATION NORFOLK	Naphthalene	46	46	NORFOLK (CITY)
ABB ENTERPRISE SOFTWARE INC	Nickel	45	45	HALIFAX
US GYPSUM CO	Mercury compounds	44	0	NORFOLK (CITY)
AKZO NOBEL COATINGS INC	Xylene (mixed isomers)	43	0	ROANOKE (CITY)
POLYNT COMPOSITES USA INC	Dicyclopentadiene	42	0	PITTSYLVANIA
SOUTHERN GRAPHIC SYSTEMS LLC	Copper compounds	42	0	HENRICO
STEELFAB OF VIRGINIA INC	Manganese	42	0	GREENSVILLE
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Acrylic acid	41	0	WARREN
SLOCUM ADHESIVES CORP	Dichloromethane	40	40	LYNCHBURG (CITY)
CARRY-ON TRAILER CORP	Glycol ethers	39	0	WESTMORELAN D
LHOIST NA OF VIRGINIA INC KIMBALLTON AREA 1	Hydrochloric acid	39	0	GILES
SOUTH ATLANTIC GALVANIZING LLC	Lead	38	0	HANOVER
TRIVIUM PACKAGING USA INC	Glycol ethers	38	0	ROANOKE (CITY)

Air Toxins and Health Risks

NORCRAFT COS	Xylene (mixed isomers)	37	0	LYNCHBURG (CITY)
US AMINES (PORTSMOUTH) LLC	Allyl chloride	36	22	PORTSMOUTH (CITY)
DYNAX AMERICA CORP	Hydrochloric acid	35	0	BOTETOURT
STRONGWELL CORP BRISTOL	Styrene	35	0	BRISTOL (CITY)
HUNTINGTON INGALLS INC	n-Butyl alcohol	34	0	NEWPORT NEWS (CITY)
GEORGIA PACIFIC WOOD PRODUCTS LLC EMPORIA PLYWOOD	Lead compounds	34	0	GREENSVILLE
US NAVY NWSY DEFENSE FUEL SUPPLY POINT YORKTOWN	Naphthalene	33	33	YORK
STRONGWELL CORP HIGHLANDS DIV	Antimony compounds	33	0	WASHINGTON
BAE SYSTEMS NORFOLK SHIP REPAIR	Lead compounds	33	0	NORFOLK (CITY)
VIRGINIA TRANSFORMER CORP	Xylene (mixed isomers)	33	0	ROANOKE
TMS INTERNATIONAL LLC	Manganese compounds	31	0	DINWIDDIE
VEOLIA JAMES RIVER PLANT	Hydrogen sulfide	31	0	CHESTERFIELD
US COAST GUARD BASE PORTSMOUTH	Lead	31	0	PORTSMOUTH (CITY)
WESTROCK VIRGINIA CORP	Hydrochloric acid	30	0	COVINGTON (CITY)
CITGO FAIRFAX TERMINAL	Naphthalene	28	28	FAIRFAX (CITY)
METALSA ROANOKE INC	Nickel	27	27	BOTETOURT
WESTROCK CP LLC	Hydrochloric acid	27	0	HOPEWELL (CITY)
BKEP MATERIALS LLC -- NEWPORT NEWS VA	Polycyclic aromatic compounds	27	27	NEWPORT NEWS (CITY)
EASTMAN PERFORMANCE FILMS LLC - PLANT II	Ethylene glycol	26	0	HENRY
INTERNATIONAL PAPER FRANKLIN MILL	Hydrochloric acid	26	0	ISLE OF WIGHT

Air Toxins and Health Risks

COLONNA'S SHIPYARD INC	n-Butyl alcohol	26	0	NORFOLK (CITY)
US NAVY NAVAL AIR STATION OCEANA BASE	Lead	26	0	VIRGINIA BEACH (CITY)
BRANSCOME-HAMPTON	Polycyclic aromatic compounds	25	25	HAMPTON (CITY)
DAIKIN APPLIED	Manganese	25	0	AUGUSTA
SAMUEL SON & CO (USA) INC	Manganese	24	0	RUSSELL
U.S. NAVY NORFOLK NAVAL SHIPYARD	Lead	23	0	PORTSMOUTH (CITY)
SOLENIS LLC	Acrylic acid	23	0	SUFFOLK (CITY)
SICPA SECURINK CORP	Glycol ethers	22	0	FAIRFAX
CITGO FAIRFAX TERMINAL	Ethylbenzene	22	22	FAIRFAX (CITY)
US DOJ FBI TRAINING ACADEMY	Lead compounds	22	0	STAFFORD
US ARMY RADFORD ARMY AMMUNITION PLANT	Copper compounds	22	0	MONTGOMERY
ARKEMA INC	Butyl acrylate	21	0	PITTSYLVANIA
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Naphthalene	20	20	WARREN
BAE SYSTEMS NORFOLK SHIP REPAIR	n-Butyl alcohol	20	0	NORFOLK (CITY)
WESTROCK VIRGINIA CORP	Chlorine	20	0	COVINGTON (CITY)
WESTROCK CP LLC	Hydrochloric acid	20	0	KING WILLIAM
MENZIES AVIATION FUELING OPERATIONS	Methyl tert-butyl ether	20	20	LOUDOUN
BINGHAM & TAYLOR	Chromium	20	20	CULPEPER
US ARMY NATIONAL GUARD FORT PICKETT (RANGES)	Lead compounds	20	0	NOTTOWAY
WESTROCK CP LLC	Barium compounds	19	0	HOPEWELL (CITY)

Air Toxins and Health Risks

US NAVY JOINT EXPEDITIONARY LITTLE CREEK BASE	Lead compounds	19	0	NORFOLK (CITY)
MICRON TECHNOLOGY INC	Ammonia	19	0	PRINCE WILLIAM
MENZIES AVIATION FUELING OPERATIONS	Ethylbenzene	19	19	LOUDOUN
ADVANSIX INC HOPEWELL PLANT	Phenol	18	0	HOPEWELL (CITY)
SOLENIS LLC	Hydrochloric acid	18	0	SOUTHAMPTON
US ARMY FORT AP HILL	Lead compounds	18	0	CAROLINE
US NAVY YORKTOWN NAVAL WEAPONS STATION BASE	Lead	17	0	YORK
ALLIED AVIATION FUELING CO INC	Methyl tert-butyl ether	17	17	ARLINGTON
SPRUANCE PLANT	Ammonia	17	0	CHESTERFIELD
RTI MARTINSVILLE INC	Aluminum (fume or dust)	16	0	HENRY
FUJIFILM WAKO CHEMICALS USA CORP	Hydrochloric acid	16	0	CHESTERFIELD
HAPCO	Zinc	16	0	WASHINGTON
CONCRETE PIPE & PRECAST LLC-HANOVER PIPE PLANT	Manganese	16	0	HANOVER
O'SULLIVAN FILMS INC	Barium compounds	15	0	WINCHESTER (CITY)
HOWMET CASTINGS & SERVICES INC	Hydrogen fluoride	15	0	HAMPTON (CITY)
VOLVO GROUP NA LLC	Ethylbenzene	14	14	PULASKI
STELLA JONES CORP-GOSHEN FACILITY	Polycyclic aromatic compounds	14	14	ROCKBRIDGE
CABINETWORKS GROUP - CULPEPER PLANT	Xylene (mixed isomers)	14	0	CULPEPER
FEDERAL MOGUL POWERTRAIN LLC	Lead	13	0	MONTGOMERY

Air Toxins and Health Risks

TTM TECHNOLOGIES NA LLC	Ammonia	13	0	LOUDOUN
SPRUANCE GENCO LLC	Sulfuric acid	12	0	RICHMOND (CITY)
AKZO NOBEL COATINGS INC	1,2,4-Trimethylbenzene	12	0	ROANOKE (CITY)
GEORGIA-PACIFIC BIG ISLAND MILL	Manganese compounds	12	0	BEDFORD
ALLIED AVIATION FUELING CO INC	Xylene (mixed isomers)	12	0	ARLINGTON
DOSWELL LP	1,2,4-Trimethylbenzene	12	0	HANOVER
BELLWOOD PRINTING PLANT	Ammonia	11	0	CHESTERFIELD
VIRGINIA CITY HYBRID ENERGY CENTER	Sulfuric acid	11	0	WISE
JEWELL COKE CO LP	Hydrogen fluoride	11	0	BUCHANAN
CHESTERFIELD POWER STATION	Polycyclic aromatic compounds	11	11	CHESTERFIELD
TTM TECHNOLOGIES NA LLC	Sulfuric acid	11	0	LOUDOUN
BRANSCOME-LEE HALL	Polycyclic aromatic compounds	11	11	JAMES CITY
DOSWELL LP	Ammonia	11	0	HANOVER
UTILITY TRAILER MANUFACTURING CO	Nickel	10	10	WASHINGTON
WESTROCK CP LLC	Barium compounds	10	0	KING WILLIAM
VIRGINIA CITY HYBRID ENERGY CENTER	Hydrochloric acid	10	0	WISE
AZZ GALVANIZING-BRISTOL	Zinc compounds	10	0	WASHINGTON
THE GOODYEAR TIRE & RUBBER CO	Polycyclic aromatic compounds	10	10	DANVILLE (CITY)
GENERAL SHALE BRICK INC PLANT 35 & 36	Hydrogen fluoride	10	0	BOTETOURT
STEELFAB OF VIRGINIA INC	Xylene (mixed isomers)	10	0	GREENSVILLE
SOLENIS LLC	Triethylamine	10	0	SOUTHAMPTON

Air Toxins and Health Risks

UPACO ADHESIVES INC	Xylene (mixed isomers)	10	0	RICHMOND (CITY)
WESTROCK CP LLC	Manganese compounds	10	0	KING WILLIAM
TRELLEBORG MARINE SYSTEMS NA INC	Toluene-2,4-diisocyanate	10	8	CLARKE
CABINETWORKS GROUP - MOUNT JACKSON PLANT	Xylene (mixed isomers)	9	0	SHENANDOAH
VIRGINIA TRANSFORMER CORP	Xylene (mixed isomers)	9	0	BOTETOURT
O'SULLIVAN FILMS INC	N,N-Dimethylformamide	9	0	WINCHESTER (CITY)
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Xylene (mixed isomers)	9	0	WARREN
TRIVIUM PACKAGING USA INC	n-Butyl alcohol	9	0	ROANOKE (CITY)
SMITHFIELD FRESH MEATS CORP SMITHFIELD FACILITY	Ammonia	9	0	ISLE OF WIGHT
GRAHAM-WHITE MANUFACTURING CO	Copper	8	0	ROANOKE
US NAVY NAVAL STATION NORFOLK	Lead	8	0	NORFOLK (CITY)
WESTROCK VIRGINIA CORP	Barium compounds	8	0	COVINGTON (CITY)
SPRUANCE GENCO LLC	Lead compounds	8	0	RICHMOND (CITY)
CITGO FAIRFAX TERMINAL	Xylene (mixed isomers)	8	0	FAIRFAX (CITY)
TYSON FARMS INC - PROCESSING FACILITY	Peroxyacetic acid	8	0	HANOVER
US ARMY RADFORD ARMY AMMUNITION PLANT	Nitric acid	8	0	MONTGOMERY
JOINT BASE LANGLEY EUSTIS-EUSTIS (JBLE-EUSTIS) RANGES	Lead compounds	7	0	NEWPORT NEWS (CITY)
STEELFAB OF VIRGINIA INC	Copper	7	0	GREENSVILLE
UTILITY TRAILER MANUFACTURING CO	Nickel	7	7	SMYTH

Air Toxins and Health Risks

ALERIS ROLLED PRODUCTS INC	Dioxin and dioxin-like compounds	7	0	CHESTERFIELD
CELANESE ACETATE LLC - CELCO PLANT	Dichloromethane	7	7	GILES
ABB ENTERPRISE SOFTWARE INC	Manganese	7	0	HALIFAX
MICRON TECHNOLOGY INC	Fluorine	7	0	PRINCE WILLIAM
WESTROCK CP LLC	Manganese compounds	7	0	HOPEWELL (CITY)
U.S. MARINE CORPS BASE QUANTICO (ENTIRE FACILITY)	Ethylbenzene	6	6	PRINCE WILLIAM
BWXT NUCLEAR OPERATIONS GROUP INC	Nitric acid	6	0	CAMPBELL
MICRON TECHNOLOGY INC	Nitric acid	6	0	PRINCE WILLIAM
U.S. MARINE CORPS BASE QUANTICO (ENTIRE FACILITY)	Naphthalene	6	6	PRINCE WILLIAM
ASHLAND SPECIALTY INGREDIENTS GP	Methanol	6	0	HOPEWELL (CITY)
WESTROCK CP LLC	Chlorine dioxide	6	0	KING WILLIAM
EVONIK INDUSTRIES	Chloroacetic acid	6	0	HOPEWELL (CITY)
CITGO FAIRFAX TERMINAL	1,2,4-Trimethylbenzene	6	0	FAIRFAX (CITY)
HUBER ENGINEERED WOODS LLC	Lead compounds	6	0	HALIFAX
CARRY-ON TRAILER CORP	Manganese	6	0	WESTMORELAND
IR ENGRAVING LLC	Nitric acid	6	0	HENRICO
SPRUANCE PLANT	Toluene	6	0	CHESTERFIELD
WEIDMULLER	Lead compounds	5	0	CHESTERFIELD
AKZO NOBEL COATINGS INC	n-Butyl alcohol	5	0	ROANOKE (CITY)
AMERICAN GFM CORP	Ammonia	5	0	CHESAPEAKE (CITY)

Air Toxins and Health Risks

YOKOHAMA TIRE MANUFACTURING VIRGINIA LLC	Polycyclic aromatic compounds	5	5	ROANOKE
ROANOKE CEMENT CO LLC	Hydrochloric acid	5	0	BOTETOURT
FEDERAL MOGUL POWERTRAIN LLC	Copper	5	0	MONTGOMERY
SPRUANCE GENCO LLC	Hydrogen fluoride	5	0	RICHMOND (CITY)
BRANTNER & ASSOCIATES INC DBA TE CONNECTIVITY MOG	Chromium	5	5	CULPEPER
O'SULLIVAN FILMS INC	Ethylbenzene	5	5	WINCHESTER (CITY)
ABB ENTERPRISE SOFTWARE INC	Copper	5	0	HALIFAX
US ARMY RADFORD ARMY AMMUNITION PLANT	Ammonia	5	0	MONTGOMERY
AMPAC FINE CHEMICALS VIRGINIA LLC	Dichloromethane	5	5	PETERSBURG (CITY)
KINDER MORGAN TRANSMIX CO LLC	Ethylbenzene	5	5	RICHMOND (CITY)
CHESTERFIELD POWER STATION	Lead compounds	5	0	CHESTERFIELD
HUNTINGTON INGALLS INC	Lead	5	0	NEWPORT NEWS (CITY)
ROANOKE CEMENT CO LLC	Lead compounds	5	0	BOTETOURT
BAE SYSTEMS NORFOLK SHIP REPAIR	Zinc compounds	5	0	NORFOLK (CITY)
STEEFAB OF VIRGINIA INC	Lead	4	0	GREENSVILLE
WESTROCK CP LLC	Chlorine	4	0	KING WILLIAM
MERCK SHARP & DOHME CORP	Acetonitrile	4	0	ROCKINGHAM
SLOCUM ADHESIVES CORP	n-Hexane	4	0	LYNCHBURG (CITY)
WESTROCK VIRGINIA CORP	Manganese compounds	4	0	COVINGTON (CITY)
STIHL INC	n-Hexane	4	0	VIRGINIA BEACH (CITY)

Air Toxins and Health Risks

KINYO VIRGINIA INC	Toluene	4	0	NEWPORT NEWS (CITY)
ALLIANT TECHSYSTEMS OPERATIONS LLC (NEW RIVER ENERGETICS)	Lead compounds	4	0	MONTGOMERY
US NASA GSFC Wallops Flight Facility	Lead compounds	4	0	ACCOMACK
CHANTILLY READY MIX CONCRETE	Mercury compounds	4	0	LOUDOUN
KIK (VIRGINIA) LLC	Chlorine	4	0	ROANOKE
DYNAX AMERICA CORP	Phenol	4	0	BOTETOURT
VIRGINIA CITY HYBRID ENERGY CENTER	Barium compounds	4	0	WISE
CAMERON CHEMICAL INC	Zinc compounds	4	0	SUFFOLK (CITY)
METALSA ROANOKE INC	Manganese	3	0	BOTETOURT
INGEVITY VIRGINIA CORP	Acetaldehyde	3	3	COVINGTON (CITY)
VIRGINIA CITY HYBRID ENERGY CENTER*	Lead compounds	3	0	WISE
ASHLAND SPECIALTY INGREDIENTS GP	Chloroethane (Ethyl chloride)	3	0	HOPEWELL (CITY)
CARRY-ON TRAILER CORP	1,2,4-Trimethylbenzene	3	0	WESTMORELAND
VOLVO GROUP NA LLC	Xylene (mixed isomers)	3	0	PULASKI
PENTAGON RESERVATION	Lead	3	0	ARLINGTON
BINGHAM & TAYLOR	Manganese	3	0	CULPEPER
AMERICAN BUILDINGS COMPANY-LA CROSSE	Manganese	3	0	MECKLENBURG
MENZIES AVIATION FUELING OPERATIONS	Xylene (mixed isomers)	3	0	LOUDOUN
BAE SYSTEMS NORFOLK SHIP REPAIR	Manganese compounds	3	0	NORFOLK (CITY)
CITY POINT ENERGY CENTER	Mercury compounds	3	0	HOPEWELL (CITY)
BINGHAM & TAYLOR	Lead	3	0	CULPEPER

Air Toxins and Health Risks

DAVIS-FROST INC	Xylene (mixed isomers)	3	0	LYNCHBURG (CITY)
DANCHEM TECHNOLOGIES INC	n-Butyl alcohol	3	0	PITTSYLVANIA
CHESTERFIELD POWER STATION	Barium compounds	3	0	CHESTERFIELD
DAVIS-FROST INC	Glycol ethers	3	0	LYNCHBURG (CITY)
MORGAN LUMBER CO INC	Lead compounds	3	0	CHARLOTTE
AMSTED RAIL CO INC	Nickel	3	3	PETERSBURG (CITY)
US DHS MT WEATHER EOC	Lead compounds	3	0	LOUDOUN
VIRGINIA MARBLE MANUFACTURERS INC	Styrene	3	0	LUNENBURG
VIRGINIA CONCRETE SHIRLINGTON PLANT	Lead	3	0	ARLINGTON
ANHEUSER-BUSCH LLC	Ammonia	3	0	JAMES CITY
AQUATIC CO	Styrene	3	0	HALIFAX
ASHLAND SPECIALTY INGREDIENTS GP	Ethylene	3	0	HOPEWELL (CITY)
BINGHAM & TAYLOR	Nickel	3	3	CULPEPER
WESTROCK VIRGINIA CORP	Lead compounds	2	0	COVINGTON (CITY)
TMS INTERNATIONAL LLC	Copper compounds	2	0	DINWIDDIE
WESTROCK CP LLC	Ammonia	2	0	KING WILLIAM
INTERNATIONAL PAPER FRANKLIN MILL	Ammonia	2	0	ISLE OF WIGHT
GEORGIA-PACIFIC BIG ISLAND MILL	Lead compounds	2	0	BEDFORD
ALERIS ROLLED PRODUCTS INC	Lead compounds	2	0	CHESTERFIELD
PILGRIM'S PRIDE CORP BROADWAY FACILITY	Ammonia	2	0	ROCKINGHAM
YOKOHAMA TIRE MANUFACTURING VIRGINIA LLC	Lead compounds	2	0	ROANOKE

Air Toxins and Health Risks

CHAPARRAL (VA) INC	Dioxin and dioxin-like compounds	2	0	DINWIDDIE
U.S. MARINE CORPS BASE QUANTICO (ENTIRE FACILITY)	Xylene (mixed isomers)	2	0	PRINCE WILLIAM
BOXLEY MATERIALS CO ROANOKE READY MIX PLANT	Lead compounds	2	0	ROANOKE (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Manganese compounds	2	0	ISLE OF WIGHT
STEEL DYNAMICS INC ROANOKE BAR DIV	Zinc compounds	2	0	ROANOKE (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Lead compounds	2	0	ISLE OF WIGHT
WESTROCK CP LLC	Ammonia	2	0	HOPEWELL (CITY)
QG PRINTING II CORP	Ethylene glycol	2	0	FREDERICK
WESTROCK CP LLC	Lead compounds	2	0	KING WILLIAM
BALL ADVANCED ALUMINUM TECHNOLOGIES CORP	Lead	2	0	AUGUSTA
ENNIS-FLINT RICHMOND	Glycol ethers	2	0	HENRICO
UTILITY TRAILER MANUFACTURING CO	Manganese	2	0	WASHINGTON
RIVER POOLS & SPAS	Styrene	2	0	RICHMOND
MODINE MANUFACTURING CO	Copper	2	0	ROCKBRIDGE
BAE SYSTEMS NORFOLK SHIP REPAIR	Nickel compounds	2	2	NORFOLK (CITY)
ALTEC INDUSTRIES INC	Manganese	2	0	BOTETOURT
NORTHROP GRUMMAN SYSTEMS CORP	Lead	2	0	ALBEMARLE
GE DRIVES & CONTROLS	Lead compounds	2	0	SALEM (CITY)
U.S. NAVY NORFOLK NAVAL SHIPYARD	Ethylene glycol	2	0	PORTSMOUTH (CITY)
APPALACHIAN PLASTICS INC	Styrene	2	0	WASHINGTON

Air Toxins and Health Risks

AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Methyl acrylate	2	0	WARREN
RPS COMPOSITES VIRGINIA INC	Styrene	2	0	WARREN
KINDER MORGAN TRANSMIX CO LLC	Xylene (mixed isomers)	1	0	RICHMOND (CITY)
WESTROCK VIRGINIA CORP	Methanol	1	0	COVINGTON (CITY)
WESTROCK CP LLC	Lead compounds	1	0	HOPEWELL (CITY)
WESTROCK VIRGINIA CORP	Ammonia	1	0	COVINGTON (CITY)
MENZIES AVIATION FUELING OPERATIONS	1,2,4-Trimethylbenzene	1	0	LOUDOUN
INTERNATIONAL PAPER FRANKLIN MILL	Cresol (mixed isomers)	1	0	ISLE OF WIGHT
HUNTINGTON INGALLS INC	Zinc compounds	1	0	NEWPORT NEWS (CITY)
DAVIS-FROST INC	Zinc compounds	1	0	LYNCHBURG (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Methanol	1	0	ISLE OF WIGHT
OLDCASTLE PRECAST INC	Manganese compounds	1	0	SPOTSYLVANIA
INTERTAPE POLYMER CORP	Toluene	1	0	PITTSYLVANIA
JEWELL COKE CO LP	Mercury compounds	1	0	BUCHANAN
ROANOKE CEMENT CO LLC	Mercury compounds	1	0	BOTETOURT
POLYNT COMPOSITES USA INC	Phthalic anhydride	1	0	PITTSYLVANIA
HUTCHINSON SEALING SYSTEMS INC	Zinc compounds	1	0	WYTHE
CELANESE ACETATE LLC - CELCO PLANT	Acetonitrile	1	0	GILES
DOSWELL LP	n-Hexane	1	0	HANOVER
US ARMY GARRISON FORT BELVOIR	Ethylbenzene	1	1	FAIRFAX

Air Toxins and Health Risks

ARBORTECH FOREST PRODUCTS INC	Lead compounds	1	0	NOTTOWAY
SUN CHEMICAL CORP	Copper	1	0	COLONIAL HEIGHTS (CITY)
METAL CASTING CO	Lead compounds	1	0	WASHINGTON
SUPERIOR CONCRETE MATERIALS INC - DULLES	Mercury	1	0	LOUDOUN
VIRGINIA CONCRETE EDSALL ROAD PLANT	Lead	1	0	FAIRFAX
STEEL DYNAMICS INC ROANOKE BAR DIV	Copper compounds	1	0	ROANOKE (CITY)
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Glycol ethers	1	0	WARREN
BIRCHWOOD POWER FACILITY	Sulfuric acid	1	0	KING GEORGE
MICA CO OF CANADA INC	Toluene	1	0	NEWPORT NEWS (CITY)
US ARMY GARRISON FORT BELVOIR	Naphthalene	1	1	FAIRFAX
POSSUM POINT POWER STATION	Ammonia	1	0	PRINCE WILLIAM
O'SULLIVAN FILMS INC	Xylene (mixed isomers)	1	0	WINCHESTER (CITY)
INTERNATIONAL PAPER FRANKLIN MILL	Phenol	1	0	ISLE OF WIGHT
ALLIED AVIATION FUELING CO INC	Biphenyl	1	0	ARLINGTON
INTELLIGENT PLATFORMS LLC	Lead	1	0	ALBEMARLE
STRONGWELL CORP HIGHLANDS DIV	Styrene	1	0	WASHINGTON
KINDER MORGAN TRANSMIX CO LLC	1,2,4-Trimethylbenzene	1	0	RICHMOND (CITY)
VOLVO GROUP NA LLC	n-Butyl alcohol	1	0	PULASKI
US ARMY JOINT BASE MYER-HENDERSON HALL (JBM-HH)	Lead	1	0	ARLINGTON

Air Toxins and Health Risks

UTILITY TRAILER MANUFACTURING CO	Manganese	1	0	SMYTH
TTM TECHNOLOGIES NA LLC	Nitric acid	1	0	LOUDOUN
CITGO FAIRFAX TERMINAL	n-Hexane	1	0	FAIRFAX (CITY)
HUBER ENGINEERED WOODS LLC	Phenol	1	0	HALIFAX
POSSUM POINT POWER STATION	Polycyclic aromatic compounds	1	1	PRINCE WILLIAM
ARGOS READY MIX BRYAN PARK CONCRETE PLANT	Lead	1	0	HENRICO
SLOCUM ADHESIVES CORP	Toluene	1	0	LYNCHBURG (CITY)
EVOLVE STONE LLC	Styrene	1	0	FREDERICK
U.S. NAVY FLEET COMBAT TRAINING CENTER ATL DAM NECK BASE	Lead	1	0	VIRGINIA BEACH (CITY)
CELANESE ACETATE LLC - CELCO P LANT	Ammonia	1	0	GILES
W&W-AFCO STEEL LLC	Manganese	1	0	WASHINGTON
US GYPSUM CO	Lead compounds	1	0	NORFOLK (CITY)
DYNAX AMERICA CORP	Methanol	1	0	BOTETOURT
MICRON TECHNOLOGY INC	Ozone	1	0	PRINCE WILLIAM
BASSETT PLANT 11	n-Butyl alcohol	1	0	HENRY
CANON VIRGINIA INC	o-Xylene	1	0	NEWPORT NEWS (CITY)
WESTROCK CP LLC	Phenol	1	0	KING WILLIAM
VIRGINIA CONCRETE DULLES PLANT	Lead	1	0	LOUDOUN
CLOVER POWER STATION	Manganese compounds	1	0	HALIFAX
THE GOODYEAR TIRE & RUBBER CO	Lead compounds	1	0	DANVILLE (CITY)
ARKEMA INC	Phthalic anhydride	1	0	PITTSYLVANIA
PERDUE FARMS ACCOMAC PROCESSING PLANT	Ammonia	1	0	ACCOMACK
HOWELL METAL CO	Copper	1	0	SHENANDOAH

Air Toxins and Health Risks

AZZ GALVANIZING-BRISTOL	Lead	1	0	WASHINGTON
AXALTA COATING SYSTEMS USA LLC-FRONT ROYAL PLANT	Ethyl acrylate	1	0	WARREN
VALMONT-VIRGINIA GALVANIZING INC	Zinc compounds	1	0	PETERSBURG (CITY)
TYSON FARMS INC-TEMPERANCEVILLE	Ammonia	1	0	ACCOMACK
CHEMSOLV INC	Dichloromethane	1	1	ROANOKE (CITY)
KINGSPAN INSULATION LLC	Methanol	1	0	FREDERICK
EASTMAN PERFORMANCE FILMS LLC-AXTON FACILITY	Ethylene glycol	1	0	HENRY
CITY POINT ENERGY CENTER	Lead compounds	1	0	HOPEWELL (CITY)

The Sierra Club Virginia Chapter is a grassroots-driven organization that advocates for a Virginia where all people may enjoy our natural treasures, access clean air and water, and thrive in a healthy community. At over 20,000 members strong, we coordinate action to promote climate solutions and oppose projects and policies that put the interests of corporate polluters above the needs of communities. We know a cleaner, more equitable future in the commonwealth is possible if we fight for it together. For more information, visit sierraclub.org/virginia.

