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ATSDR Report: Bristol’s Mitigation Efforts Show Promising Results and Community Risk Remains Low

BRISTOL, Va. – The Virginia Department of Health (VDH) has reviewed the release of a Health Consultation Report by the Agency for Toxic Substances and Disease Registry (ATSDR) evaluating ambient air concentrations near the Bristol Quarry Landfill in Bristol, Virginia from 2020 to 2022. The report was developed in response to community concerns about odors and air quality.

Since 2020, the City of Bristol, in coordination with the Virginia Department of Environmental Quality (DEQ) and the U.S. Environmental Protection Agency (EPA), has taken significant steps to address the issue. These steps include extensive air sampling, engineering improvements, and the installation of odor mitigation systems. These actions have led to a substantial reduction in emissions. In addition, the landfill is no longer accepting waste, with permanent closure planned.

ATSDR’s health consultation is a scientific evaluation of environmental data to determine whether exposure to chemicals in the air could pose health risks. The health consultation uses the highest levels of exposures measured during the sampling period during 2021 and 2022 to estimate potential risk. This approach reflects a worse-case scenario and is unlikely to represent actual conditions experienced by residents. **It is important to note that this report cannot assess an individual health risk and does not predict whether any specific person will develop health problems.**

“We recognize that members of the Bristol community are concerned and want to reassure residents that the overall health risk is low,” said Mount Rogers Health District Director Meagan Helmick, PhD, MPH, CHES®. “The city’s actions have made a meaningful difference, and we will continue to support efforts to protect public health.”

Key Findings from the Report

- Benzene, a chemical found in many urban environments, was detected at levels that could pose a slight increase (less than 0.01%) in cancer risk if someone were exposed continuously, 24 hours a day, seven days a week, for 25 years.
 - The estimated maximum concentration of benzene was 10.2 parts per billion (ppb), below typical urban levels (11 ppb) and three times lower than levels shown to cause health effects in laboratory studies.
 - ATSDR calculated a lifetime excess cancer risk of less than 1 in 10,000, which is considered elevated but still low.
 - This estimate reflects a worst-case exposure scenario and is unlikely to represent actual conditions experienced by residents.

- Short-term exposures to sulfur dioxide (SO₂) may have caused temporary breathing discomfort, especially for individuals with asthma or other respiratory conditions. These effects are typically short-lived and reversible.
- Odorous compounds, such as methyl mercaptan and tentatively identified compounds (TICs), may have caused symptoms like headaches or nausea, but were not found at levels expected to cause long-term health effects.
- Other chemicals detected in the air were not found at levels likely to cause health problems.

Benzene, the chemical identified in the report as contributing to a slight increase in cancer risk, is commonly found in urban air due to sources such as vehicle exhaust, gasoline, and industrial emissions. Cigarette smoke remains the leading source of benzene exposure for individuals. About half of the exposure to benzene in the United States results from smoking tobacco or from exposure to tobacco smoke. Smokers are exposed to approximately ten times more benzene than non-smokers, making tobacco use and exposure to cigarette smoke, a significantly greater contributor to personal exposure than the ambient air levels measured near the landfill.

VDH emphasizes that while some exposures may have occurred, the overall risk to the community is minimal. The report uses a health-protective approach to ensure public safety, which may overestimate actual risk. Community members are encouraged to continue reporting odor concerns to local and state agencies (<https://bristolvalandfill.org/feedback>).

VDH remains committed to supporting the City of Bristol and its residents. It will continue to work with local, state, and federal partners to monitor environmental conditions, provide public health guidance, and ensure transparency.

For more information on the ATSDR report please contact Dr. Michael Byrns, regional director of ATSDR Region 3 Office at (404) 498-1681 or by email at ab79@cdc.gov. Residents of Virginia with other health concerns or questions can contact the Public Health Toxicology Team at (804) 864-8182 or by email at toxicology@vdh.virginia.gov.

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