

RECOMMENDATIONS FOR SCHOOLS IMPACTED BY ENVIRONMENTAL ODORS IN THE COMMUNITY

County of San Diego



OVERVIEW/BACKGROUND

For more than half a century, cross-border flows containing untreated sewage, sediment, and trash have been entering the Tijuana River Valley. This impacts local recreation, damages sensitive habitat, threatens public health, and causes beach water contact closures.

- There have been more concerns in recent years about water quality in the Tijuana River Valley, due to more frequent infrastructure failures and increased transboundary flows all year round.
- Trash and raw sewage flowing from the Tijuana River Valley into San Diego waterways have been at elevated levels due to two years of near-record rainfall and infrastructure failures on both sides of the border.

The County of San Diego Public Health Services is issuing the following guidance for schools that may be impacted by environmental odors detected in the vicinity of Tijuana River Valley and surrounding communities.

- Intermittently elevated, but not toxic, concentrations (levels) of hydrogen sulfide, which smells like “rotten egg”, have been detected in the air in the same areas.
- Hydrogen sulfide occurs naturally in some environments and is also released during organic decomposition (breakdown), such as from sewage treatment plants and in beaches with large amounts of decaying seaweed.
- The County of San Diego continues to work with the California Department of Public Health and the Centers for Disease Control and Prevention to evaluate hydrogen sulfide concentrations and advise on the situation. The San Diego County Air Pollution Control District investigates air quality concerns including odors, truck idling, smoke, dust, and improper asbestos removal to determine compliance with air quality rules.

This guidance is intended to assist school officials to inform their decision-making for school activities. This guidance, including the table of actions, is not intended to supersede existing guidelines or notifications by local authorities. Changes are ultimately a school decision based on local air quality conditions, the availability and quality of school building air filtration, and direct observation of onsite air quality.

HEALTH IMPACTS

The health impact of air pollution or odors depends on the amount of gas present, sensitivity of the person, intensity of activity, and length of exposure. The worse the pollution or odors are, the more important it is to take breaks and watch for symptoms.

Hydrogen sulfide is a colorless gas that has a very strong odor (like “rotten egg”). Its smell can be detected and cause temporary headaches and nausea even below the minimum detection limit of 1 part per million (ppm) or 1000 parts per billion (ppb) of typical equipment used to detect it. The levels detected, thus far, are not expected to cause irreversible health effects. However, the strong

odor, in some cases, can lead to headaches and irritation in the eyes, nose, throat, and lungs. These symptoms may be accompanied by dizziness, nausea/vomiting or abdominal discomfort. These symptoms should be short-term and typically resolve when the odor goes away or when the person is in an area where the odors are not present. Symptoms can be worse in people with pre-existing lung or heart conditions, such as asthma, COPD, or heart disease. Sensitive individuals include all children and those with asthma or other heart/lung conditions. Children with respiratory or heart conditions are more vulnerable and may require extra precautions. School officials should consider advising parents to consult with their family health care provider. If symptoms are persistent, worrisome, or worsening, people should seek medical attention and take steps to reduce your exposure to the odors (recommendations below).

RECOMMENDATIONS

- 1) If anyone feels their symptoms are life threatening, seek immediate medical care by calling 9-1-1.
- 2) Where feasible, central heating, ventilation, and air conditioning (HVAC) systems can be equipped with High Efficiency Particulate Air (HEPA) or MERV-rated filters with activated charcoal (carbon) to improve the air quality inside and reduce odors.
 - a. A filter with activated carbon plus potassium permanganate, if available, is the best air filter to capture hydrogen sulfide. Consult with an HVAC expert to determine the most appropriate equipment(s) for your school buildings.
 - b. Certified portable HEPA indoor air filters with activated charcoal may be used in buildings without HVAC systems. A partial list of California Air Resources Board (CARB) approved air cleaners is listed below.
- 3) Students, faculty, and school staff impacted by odors should have free access to disposable masks. Masks should be changed at least twice per day during school hours. Moisture buildup in masks may trap hydrogen sulfide odors over time.
 - a. For assistance in obtaining masks, schools may contact the Medical Operations Center by phone at (619) 772-4247 or email at MHOAC.HHSA@sdcounty.ca.gov.
- 4) Students with diagnosed medical conditions such as asthma should have their prescription medications available at school offices, should they require their medications for respiratory symptoms. Schools should check with families to ensure that students' medications are available for use at school as needed.
- 5) Schools should use discretion in limiting student exertion outdoors in the presence of odors. This may entail canceling outdoor physical education and athletic events in impacted areas. It is generally advised to implement decisions one day at a time and make a new decision the next day based on conditions/odors. However, if it is anticipated to have elevated exposures, such as during heat waves, it is reasonable to make recommendations for several days in advance.
- 6) Seek medical care for any person at school with persistent or worsening symptoms.

At the school's discretion, for buildings and rooms without HVAC systems or poorly functioning systems, maximize ventilation by obtaining a room air purifier, moving to another room (as feasible), and/or allow breaks for students who are being affected by the odor.

For more information on protective measures, visit the County of San Diego [South Region Health Concerns Website](#) or email [pfs.southregionhealth.hhsa@sdcounty.ca.gov](mailto:phs.southregionhealth.hhsa@sdcounty.ca.gov).

AIR CLEANERS AND FILTERS TO IMPROVE INDOOR AIR QUALITY

Air filters designed to for use in HVAC systems, if properly configured and maintained, may have the greatest potential to improve air quality because most HVACs circulate very large volumes of filtered air throughout the space. Portable units are usually best for single room use because of their limited capacity to circulate large volumes of filtered air.

Some examples of certified portable air filters/cleaners are listed below, per CARB. These are just listed as examples and a complete list can be found on their website. The ones listed were found to be available on Amazon and at local stores.

Brand	Model Name	Model Number	Type	Date Notified	EO Number
Aireox	Model 45x	45B	Mechanical	2020-01-23	G-20-009
Levoit	Tower Pro HEPA Air Purifier	LV-H134	Mechanical	2019-06-05	G-19-086
Winix	5300-2	5500-2	Electronic	2016-04-20	G-16-053
GermGuardian	Air Purifier	RAC5250PT	Electronic	2018-12-14	G-18-136

RESOURCES

Local

- **[South Region Health Concerns](#)**: Provides information on the ongoing monitoring and investigation of health concerns in the South Region.
- **[Alert San Diego](#)**: The official source of information from the County of San Diego during a large-scale emergency.
- **[Beach & Bay Water Quality Monitoring Program](#)**: Protects the public health of millions of residents and visitors each year through beach water testing, public education, outreach, and beach postings.
- **[Department of Environmental Health and Quality](#)**: Enhances public health and protects environmental quality, promotes environmental awareness, and ensures compliance with local, state, and federal environmental laws.
- **[San Diego Air Pollution Control District](#)**: Maintains the air quality in San Diego County to protect public health and the environment.

For Schools

- **How to Report Odors**: School staff can report odor complaints to the San Diego Air Pollution Control District (SDAPCD) by:
 - Mobile app that can be downloaded using the QR code (to the right),
 - Phone at (858) 586-2650,
 - Email to apcdcomp@sdapcd.org, or
 - Visit www.sdapcd.org/complaints.



- **Air Quality in Schools:** Resources on modifying school activities to protect the health of children from air pollution.
 - [Ventilation Information | Flyer](#)
 - [Guidelines for Schools and Wildfire Smoke](#) (California Department of Education)
 - [Air Quality and Outdoor Activity Guidance for Schools](#) (U.S. Environmental Protection Agency)
- **Ways to Prevent Diseases:** Diseases can spread in school settings in many ways. Learn more about steps to prevent diseases in schools, including:
 - [Epidemiology School Response Team](#)
 - Preventing the Spread of Infection in K-12 Schools [Presentation](#) | [Flyers](#) | [Social Media](#)
- **Pediatric Environmental Health Specialty Units (PEHSU):** A national network of experts in child health issues caused by environmental exposures.

California Air Resources Board (CARB)

- [List of CARB-Certified Air Cleaning Devices](#)

California Water Boards

- [Project Clean Water | Tijuana River Watershed Management Area:](#) Information on the parts of the Tijuana River Watershed located within U.S. boundaries.
- [Water Quality Improvement Plans:](#) Includes descriptions of the highest priority pollutants or conditions in a specific watershed, goals and strategies to address those pollutants or conditions, and time schedules associated with those goals and strategies.

Centers for Disease Control and Prevention

- [Oceans, Lakes, and Rivers](#)
- [Environmental Odors](#) (CDC Agency for Toxic Substances and Disease Registry)
 - [Frequently Asked Questions](#)
 - [Fact Sheet](#)
 - [Hydrogen Sulfide Frequently Asked Questions](#)