



FAQ: SCAQMD Coastal Offshore Odor investigation and summary of health effects of pollutants measured in the air samples

Q: What is the South Coast Air Quality Management District (SCAQMD) doing in the Coastal Offshore Odor investigation?

The SCAQMD has received many odor complaints from people in the Seal Beach, Huntington Beach, and Long Beach areas, reporting a gas/sulfur/chemical type smell. These odors are reported to come from the shoreline and quickly travel through the neighboring cities, and then eventually dissipating. SCAQMD staff have responded to complaints and are working to identify the source of the odors. More information about our investigation is available on our website: <http://www.aqmd.gov/home/news-events/community-investigations/coastal-area-odor-complaint-response-information>

The SCAQMD may collect samples as a result of an odor investigation or during routine surveillance activities. In addition, for this investigation, SCAQMD is working with the Long Beach, Huntington Beach, and Seal Beach Fire Departments to collect air samples as part of their response to calls about these odors. The samples are collected when odors are present, and take less than a minute to collect. These short-term samples are sometimes called “grab samples” because they are meant to capture a snapshot of what was in the air at that time. Between March 1, 2017 and November 7, 2017, a total of 35 grab samples were collected. These samples were analyzed to find out the levels of air pollutants that were in the air when the samples were collected.

Q: What were the air sampling results?

The air sampling results showed that some samples had higher than typical levels of some air pollutants, including hydrogen sulfide (H₂S) and several air pollutants known as hydrocarbons. Hydrocarbons include ethane, propane, isobutane, n-butane, n-hexane, benzene, toluene, ethylbenzene, xylenes, and several others.

The chances of these pollutants causing health problems depend on the pollutant levels in the air and how long the exposures last. It is important to note that many of these pollutants may not have been at levels high enough to cause health problems.

Q: What are the health effects of the hydrogen sulfide (H₂S) levels that were detected?

Hydrogen sulfide (H₂S) is a gas that smells like rotten eggs. Many natural and industrial processes can create H₂S, including decaying food, manure, sulfur hot springs, petroleum refining, and sewage treatment. People can smell this chemical at very low levels (down to a few ppb), below levels that would cause harm to human health. Because of this, the main problem typically caused by outdoor levels of H₂S is an odor nuisance.

To evaluate the health impacts of the H₂S levels that were measured, we compared the results to the California state standard for H₂S, which is 30 parts per billion (ppb), averaged over one hour. At that level, most people can smell the odor and some people may have temporary symptoms, such as headaches and nausea.

All of the samples collected between March 1, 2017 and November 7, 2017 were below the 30 ppb one-hour state standard for H₂S. In summary, the main health problem caused by these

levels of H₂S is an odor nuisance, which may still cause temporary health effects, such as headaches and dizziness, and have impacts on quality of life.

Q: What are the health effects of the hydrocarbon levels that were detected?

To evaluate the health effects of the hydrocarbon levels detected, we compared the results to reference exposure levels (RELs), which are protective levels for non-cancer health effects (e.g. skin problems, breathing problems). These RELs are established by the state Office of Environmental Health Hazard Assessment (OEHHA).

Specifically, we compared the measured pollutant levels to the short-term (acute) RELs, which is appropriate for exposures lasting a short time (e.g. one hour). Breathing these pollutants for short periods of time at levels below the acute REL would not be expected to cause non-cancer health problems.

All of the levels in samples collected between March 1, 2017 and November 7, 2017 were below acute RELs (e.g. for benzene, toluene, xylenes, and styrene). In other words, the levels of these pollutants are not expected to cause short-term health problems.

Some pollutants that were detected in the samples do not have established RELs, but the U.S. Agency for Toxic Substances Disease Registry (ATSDR) has some information on total petroleum hydrocarbons as a mixture. At very high levels, some of these pollutants can affect the nervous system, including causing headaches and dizziness, or a feeling of pins and needles in the hands and feet (peripheral neuropathy). Other pollutants in this mixture can have effects on the blood, immune system, lungs, skin and eyes, but only at high enough concentrations. More information on the health effects of total petroleum hydrocarbons can be found here: <https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=423&tid=75>.

Q: How does breathing these pollutants in short bursts affect my health in the long term?

These short-term exposures are unlikely to have much impact on a person's risk of chronic health conditions, such as cancer. Cancer risk from air pollutants such as benzene are caused from breathing high levels over years to decades. Because the grab samples were collected when odors were being detected in the community, these air pollutant levels in these short-term samples are higher than typical levels of air pollution in this area, e.g. when the odor events are not happening. Community members have said that these odor events last only a short time.

The long-term average levels of benzene and other hydrocarbons in these locations (even including these coastal odor events) are expected to be far below the levels in the short-term "grab" samples. It is the long-term levels that affect the chances of developing chronic health conditions, including cancer. There are many sources of benzene and other hydrocarbons in Southern California, and everyone is exposed to some of these air pollutants from outdoor sources (e.g. traffic pollution, industrial emissions) as well as indoor sources (e.g. building materials, household products).

Q: Who do I call to report the odors?

Please call 1-800-CUT-SMOG (1-800-288-7664) to report an outdoor air quality complaint to the South Coast Air Quality Management District (SCAQMD). You can also use our online complaint form, which is available at this website: <http://www3.aqmd.gov/webappl/complaintsystemonline/NewComplaint.aspx>