

FAQ: Landfill Odor Control

1. What's that smell?

Landfill gas is formed when buried solid waste decomposes. This process creates gases, the most common of which are methane (CH₄) and carbon dioxide (CO₂), which typically combine to make up more than 95% of the landfill gas. While these two gases are odorless, the unpleasant aromas are caused by the small percentage of other gases. The most common odors from the landfill are caused by hydrogen sulfide (H₂S) and volatile organic compounds (VOCs). Hydrogen sulfide is most commonly recognized as a strong "rotten egg" smell. The smell of volatile organics can vary, but typically have a somewhat sweetly pungent smell.

Did you know that there are actually two additional sources of odors adjacent to the landfill? There is a feedlot and a compost facility next door, each with their own unique odors.

2. What does the landfill do to help control odor?

We operate 89 collection wells to capture landfill gas before it leaves the landfill, with an additional 75 wells installed by spring 2018. This is above and beyond standard industry best management practices. Collected gas is routed to an on-site facility that cleans it to natural gas pipeline quality.

Every day, employees spread and compact the solid waste in the active area of the landfill as it arrives. At the end of each day, it is then covered with a minimum 6 inch layer of clean soil. This cover helps to control the odor, prevent litter from blowing around, prevent fire, and ward off scavenging animals.

An odor patrol assesses the presence of odors from 9 different locations in Melissa each day the landfill operates. Monthly, the landfill surface is walked and inspected for excessive release of landfill gas.



Figure 1: Gas Well



Figure 2: Gas Flare

3. Why does the strength of the smell vary so much from day to day?

The generation and spread of landfill gas depends on a variety of atmospheric conditions:

Rainfall

Because water speeds up the decomposition process, landfill gas odors can become stronger in the

aftermath of heavy rain.

Barometric Pressure

On days when the barometric pressure is low or dropping, it is easier for landfill gas to migrate from the landfill.

Temperatures

During warmer temperatures, hot air rises taking escaping gas higher up into the atmosphere where it is not as noticeable. In colder temperatures, the escaping gas and odors are held closer to the ground in greater concentrations thereby creating a stronger smell.

Wind

Wind helps spread the escaping gas and lessen their concentration, but days with little wind mean that odors may be more noticeable.

Moon Phases

Certain moon phases also contribute to gas migration, similar to the influence the lunar pull has on tides. The pull of a New Moon or Full Moon can make it easier for landfill gas to migrate from the landfill.

On a cold, cloudy, windless day with low barometric pressure, the landfill gas and their associated odors will be hardest to control.

4. Does the smell pose any health risks?

Even when odors are strongest, the air's circulation significantly reduces the concentration of the gas to levels far below any that could be harmful by the time the smell is noticeable. See additional information provided in the links below.

5. How do I report landfill odors?

Contact Gary Higgs, NTMWD Landfill Manager at **(972) 442-5405** or ghiggs@ntmwd.com for odor complaints so they may be investigated. This phone number is always staffed.

Additional Information

EPA: Facts About Landfill Gas

<http://www.dem.ri.gov/programs/benviron/waste/central/lfgfact.pdf>

TCEQ: Landfill Odors and Emissions

<http://www.tceq.state.tx.us/toxicology/q-a/landfills>

CITY OF MELISSA: Update on Recent Odor Concerns

http://www.cityofmelissa.com/news_detail_T1_R626.html