

# Odor Control at Waste Disposal Facilities

Choosing the correct method to manage odors.

■ By Jeff Eriks and Jesse Levin

The idea of “Not In My Back Yard” (NIMBY) is a real thing in today’s world—and getting more prevalent. Odor is one of the main issues that comes up every time a waste disposal facility is looking to build or expand. While every resident produces waste or recyclable materials daily, none of them want to live near or see the facility where it ends up. Nearby residents, whether homeowners or businesses, do not want waste facilities near their home or place of business for a lot of different reasons, but odor tends to be one of the primary ones. Odors from landfills, transfer stations, recycling facilities and other like sites have been an issue in the past as well as today. My expertise does not lie in treating landfills so we will not be discussing odor issues in relation to this type of waste disposal facility. However, it is possible to design a new or existing facility’s renovation to help owners manage waste properly and prevent odor issues or work with them to help eliminate them going forward.

## Prevention

The key to odor reduction is prevention. Every day, transfer stations and recycling facilities accept hundreds of thousands, if not millions, of tons of waste. The facility itself is limited to the material it receives based on its permit, so while odor may be a non-issue at many facilities, it is at a few. In most cases, recycling facilities or MRFs accept clean waste that has little to no moisture or organic content, so they tend to have few, if any, odor issues. Dirty MRFs and transfer stations on the other hand take in all types of materials based on their permits from various environmental agencies throughout the U.S. Every facility has their own permit and their own requirements. When working with owners to design a facility,

a few of the initial questions that should be asked include what type of material they can accept and how the material will be entering and leaving the facility. The goal with any facility that accepts waste is to get it out as fast as you can. Facilities should be designed for waste to be stored in a methodical order. This allows for the stored material to be efficiently removed from the floor, into tractor trailers and onto its next destination, typically a landfill. Getting the tipping floor empty daily is one way to reduce odors from a waste disposal facility. This is a method called “balancing your floor”. The inbound and outbound materials are analyzed on a daily basis, projected downtimes for your receiving landfill are factored in and a facility that can handle your waste daily is designed. This keeps waste in the transfer at all times through regular operations.

## All About the Design

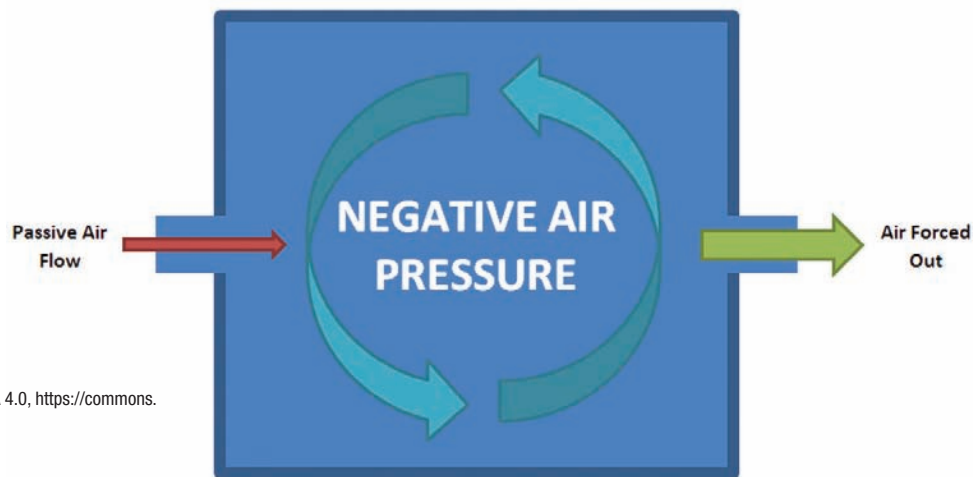
Another way owners can combat odors is by designing facilities that can be kept clean. Inevitably, some loads of materials come in wet due to precipitation in the area. This water is called leachate and facilities are required to manage this properly. One way this is managed is by creating catch basins that cannot be clogged easily to capture leachate and transfer it offsite. This water, as one can imagine, is not very clean so you want it to leave the floor and pit quickly. This water should be captured in specific areas that do not have material sitting to limit the risk of clogging. The unique placement of these drains allows them to stay clear from debris and only requires cleaning two to three times per year instead of daily or weekly. The free flow of leachate also helps to eliminate odors. Clean means making sure there is nowhere for material to sit or pile up behind push walls, in pits, in corners or anywhere else throughout the building. How owners like to operate should be understood and the facility design should not include any pockets or storage areas. This means material cannot build up and sit for days or weeks at a time and reduces daily and weekly maintenance around the facility and eliminates places for vector to live or hide.

## “Mechanical” Solutions

Outside of the design philosophies listed above, there are also, what I would call, mechanical ways to control or limit odor in the facility. One of these methods, which is typically very expensive, is negative air pressure. This method ensures that the facility is always under negative air pressure, which means that no air is pushed out of the building but it is pulled into it. The mechanical units are used to “pull” the air and treat it before it is exhausted out into the atmosphere. This requires a fully enclosed transfer station, with high speed



**Figure:** Misting system at a transfer station.  
Photo courtesy of NCM Odor Control.



**Figure 2:** Negative air pressure.

Photo courtesy of Rrobotto - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=56580980>.

doors or air curtains at each entrance, and may require a fair amount of maintenance to ensure everything continues to work properly for the life of the facility.

### Misting/Odor Control Systems

Another method of control is a misting/odor control system within the building or along the property lines. Some companies in this line of business have developed odor control systems that are placed within or near waste handling facilities. New tools have emerged to combat odors and provide a clearer picture of the nature of impacts from solid waste facilities. There are adaptive odor control systems that monitor and respond to changing odor conditions within or outside of the facility. Some neutralizers have been tested using EPA guidelines and come with toxicity reports—meet the changing needs of the industry. New delivery systems have also been developed that target specific odors and odorous locations.<sup>1</sup>

In other words, if you have odors in an existing facility, there are options out there for how to deal with the issue if you do not have the ability to make modifications to the design or operation due to the confines within the building or site as it exists today.

### Manage Your Odors

In summary, whether you are designing a new facility or dealing with an existing one, it is important to develop ways to manage your material and balance your floor. Also, getting leachate into the drains and out of the building is also key to reducing odors on a daily basis, especially in areas that get more precipitation. Ensuring your facility does not have places for material to sit in corners or build up in “pockets” is essential to keeping maintenance costs down and help eliminate odors. Lastly, mechanical systems exist to assist you in odor elimination or prevention, some more cost effective than others, and what is right for you may not be right for the facility nearby. Each operation is different based on their unique circumstances. | **WA**

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*Jesse Levin is President at NCM Odor Control, a fully integrated odor and dust control company based in Broadheadsvile, PA. One of their divisions provides air model studies to aid in negative air system designs, CFD (computational fluid dynamic) studies that allow our clients to visually map out the migration of dust, odors, and landfill gases. In an effort to improve their offerings, NCM Odor Control changed their odor control product formulations to meet the changing demands of the industry, ensuring clients get the best products available. Chemicals and air model studies are just part of what they offer. The company’s engineering division custom designs a wide range of odor and dust control systems. For more information, call (855) NCM (626)-5540 or e-mail [ncmodorcontrol@gmail.com](mailto:ncmodorcontrol@gmail.com).*

#### Note

1. According to Jesse Levin, President of NCM Odor Control.

**Run your service for less** with our award-winning route optimization software specifically for solid waste and recycling collection.



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