



Why Do An Odor Study?

Odor problems at wastewater treatment facilities (WWTFs) have become a much larger problem for facility operators in recent years. Many WWTFs that were constructed in rural areas are now surrounded by neighbors due to urban sprawl. In addition, residents in nearby communities have become far less tolerant of odors emanating from these facilities. Regulatory agencies can also require facilities to take action. In an effort to be a good neighbor, some Municipalities and Utility Districts have developed their own strict odor control standards.

Odor studies effectively identify the root causes of odor emissions, quantify and prioritize the problem areas and their effects on the surrounding community. The study includes an evaluation of odor control technologies and develops the most cost effective solutions. Ultimately, odor studies provide a scientific, unbiased and independent analysis of the situation and provides the stakeholders with the information they need to proceed on the path that makes the most technological and financial sense.

As odors have become a bigger issue, many types of odor control technologies (both effective and ineffective) have been developed. It can be difficult to sort through all of the available technologies to determine which one will provide the best treatment at the lowest possible cost. Unfortunately, odor control equipment vendors will sometimes peddle their systems directly to the end-user without having the end-user's best interest in mind or the information needed to make good decisions. No odor control system can be properly selected and sized until the proper testing has been completed and the results are analyzed by an independent odor control expert who is knowledgeable of all available technological options.

WHAT IS INVOLVED IN AN ODOR STUDY?

Most odor studies include the following tasks:

1. Meeting with key staff to obtain background information, odor complaint history, and establish project goals and objectives.
2. Testing all of the potentially significant odor sources at the site for odor detection threshold, hydrogen sulfide, and other common odor causing compounds.
3. Prioritizing sources according to odor emissions to ensure that the most odorous sources are addressed first.



Continuous H₂S



Air Sampling and Testing



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4. Developing and evaluating odor control alternatives, including evaluation of viable technologies, as well as estimating capital and operating costs of each option.
5. Conducting air dispersion modeling to predict the odor impact of the existing facility on the surrounding community, as well as the reduced odor impact of the facility based on proposed odor control improvements.
6. Preparing a summary report or technical memorandum which summarizes the results of testing and air dispersion modeling, presents odor control alternatives and provides conclusions and recommendations.
7. Meeting with key staff to present results and plot a path forward.



Air Dispersion Model Example

WHEN SHOULD AN ODOR STUDY BE PERFORMED?

The reasons to conduct an odor study may include:

- Odor complaints are being received
- Health concerns exist for employees or neighbors
- Governmental regulatory requirements
- The desire to be proactive to ensure your facility is a good neighbor
- Facilities that have some odor control in place but want to identify and tighten down other possible sources

The benefits of conducting an odor study vs. odor control system trial and error include:

- Eliminating the risk of spending time and money on a system or technology that is inappropriate for the application or that is poorly sized for the conditions.
- Providing assurance that the highest sources of odor are being addressed first and that the appropriate amount of odor control is provided. Many odor control improvements projects are completed in phases with the highest sources of odor



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controlled first and then money is spent on secondary sources only if problems remain.

- Air dispersion modeling can be used to predict the impact of potential odor control options before the money is spent! The potential cost savings produced by modeling can be dramatic.
- The odor study will determine how much odor control is required, which technology to use and how much it will cost. All odor studies are different depending on local conditions and are tailored to the particular project.
- Webster Environmental Associates, Inc. stands ready to provide an independent odor control study for your facility.