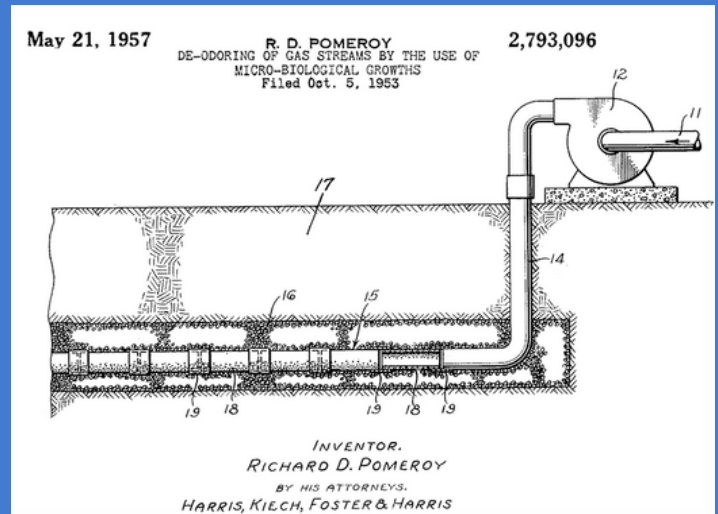


BIOFILTRATION, BIOOXIDIZATION, & BIOSCRUBBING

METHOD OF ABATEMENT

Biofiltration is the process of utilizing natural biological oxidation for the destruction and removal of VOCs, odors and hydrocarbons. Simply put, biofiltration is the degradation of organic and inorganic substances by microorganisms. The air flows through what is called a packed bed of media causing the pollutants to transfer into a thin biofilm on the surface of the packed media. The microorganisms are housed in the microfilm and degrade the pollutants.

The most common uses of biofiltration, bioscrubbers and biooxidizers include in the processing of waste water, capture of VOCs in surface runoff and microbiotic oxidization of air contaminants.



ADVANTAGES

While biological filters have a simple superficial structure, their internal hydrodynamics and microorganisms' are complex in their biology. These features allow the process to have a high capability in maintaining their performance and rapidly return to initial levels following a period of low use, no use, intense use, toxic shocks, and media backwash, which is a high rate of biofiltration processes. Additional advantages include:

- Because microorganisms are retained within the biofilm, biofiltration allows the development of microorganisms with relatively low specific growth rates
- Biofilters are less subject to changes such as hydraulic shock and variable or intermittent loading
- Operational costs are usually lower than option such as activated sludge
- Final treatment result is less influenced by biomass separation since the biomass concentration at the effluent is much lower than for suspended biomass processes;
- Attached biomass becomes more specialized at a given point in the process train as a result of the lack of biomass return