

# O<sub>3</sub>zonology Inc.

## GENERAL INFORMATION

Ozone reacts upon odors by chemical oxidation. It is consumed in the reaction process so with proper dosage in relation to the odor load, and sufficient reaction time, the end result is no odor and no ozone residual.

A small amount of ozone goes a long way. It is dosed at 1-2 ppm per ppm of hydrogen sulfide. At a 1:1 ratio, 5 ppm H<sub>2</sub>S in a 1,000 CFM foul air stream requires 1/2 lb/day O<sub>3</sub>. If either the dosage ratio, ppm H<sub>2</sub>S, or CFM of air stream was doubled, the ozone requirement would double.

The contact time for ozone reaction with H<sub>2</sub>S is generally accepted to be 20-30 seconds.

A typical odor control system consists of an ozone generator, a source of compressed air and an air dryer for ozone generator feed gas preparation, and a contact chamber. Systems may have ozone monitors and modulating controls to regulate ozone production.

An ozone contact chamber is utilized to provide reaction time which is not achievable in a stack or duct. A series of baffles, and sometimes tiers, creates a long travel path (thus long dwell time) in a structure requiring a minimum of space. Contact chambers may be roof top mounted to further save space.

Ozonology fabricates contact chambers using a modular fiberglass building, inside of which is our designed arrangement of baffles - also of fiberglass. Exhaust from the contact chamber is via a mushroom ventilator cap (for low profile) or a short stack. The fiberglass is standard in a uV stabilized white, pebble-texture, finish. Colors to closely match building exterior colors are optionally available.

Ozone is introduced into the contact chamber by a sparger inserted in the odor supply duct. This injection point may be at the entrance to the contact chamber or further upstream in the odor supply duct.

The ozone generator, air dryer, and any monitors and/or controls are installed inside the plant. Ozone is piped in stainless steel or Teflon tubing to the odor supply duct sparger.

All models of ozone generators manufactured by Ozonology are ambient air cooled, thus no plumbing for cooling water is required. The units are wall mounted, thus no floor space is sacrificed.

If ozone is being used on a smaller scale (wet well), this application often is designed for ozone to be delivered directly into the headspace of the wet well. Since ozone is heavier than air, if it is introduced near the water surface, an ozone blanket will form. As odors escape from the water, they are chemically oxidized.