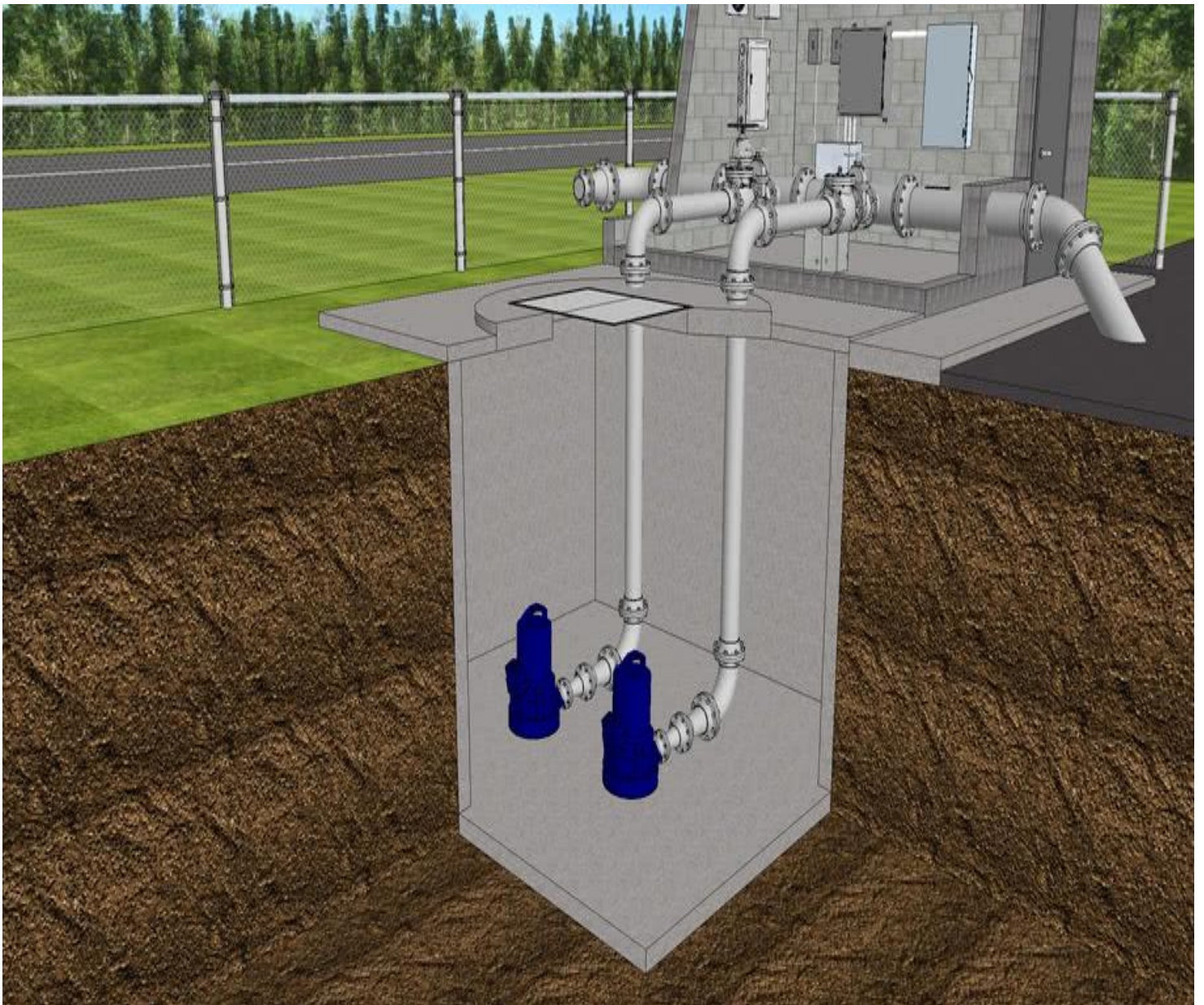


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# Municipal Water



# 3D Kleen



Picture: Kleen 03 manifold,blower,and controls Top view

The Patent Pending Quad Flow Tornados are high efficiency all welded, heavy duty PVC or stainless-steel devices. These state-of-the-art Tornados are designed to pull water from the bottom of a station and or pond/basin for treatment. By injecting them with heavy concentrations of dissolved oxygen and adding high strength ozone directly into water column. By operating with low-pressure (>2.5 P.S.I.) high-volume ambient airflow, these devices maximize oxygen transfer and energy efficiency. These units are scalable, multi voltage and can be modified to fit any Municipal water application.

Kleen 03 utilizes the latest "Green Technology" and continues to set the standards in the water industry. Our products are designed to be as maintenance-free as possible. Constructed from heavy-duty all welded PVC, Coated Aluminum or stainless steel which allows

our units to withstand extreme temperatures and harsh environments encountered in every Municipal water application. Our O3 manifold is constructed of all welded aluminum designed for ozone. In most installations, our clients have seen a cost reductions up to 95%. Our product line is the most energy efficient, maintenance friendly, and cost-effective product introduced to the Municipal water market in the past 40 years.

Our O3 uses corona discharge with a 5 year warranty on our O3 manifold. Since there are no moving parts to wear out inside of the station. Since it is secured in place, there is no need for man entry in any installation. The blowers and O3 manifold are located outside the station, Units operate at low pressure ambient/controlled temperature, and the power can be turned off and locked-out at the blower location.



# Process

Air supply is provided to each tornado and O<sub>3</sub> manifold via regenerative air blower placed at a remote location on the outside of the station for easy access. With no electricity in or around the water and no moving parts in the water sealed bearing blowers, lifetime warranty on our complete ozone manifold. The only maintenance required is a air filter clean or replace as needed. We have designed the safest and most environmentally sustainable solution on the market.

By directly adding air and O<sub>3</sub> simultaneously into the water column. We can achieve results that will eliminate F.O.G., H<sub>2</sub>S, C.O.D.,B.O.D. Further break down sanitary napkins/Wipes. While also Pretreating the water by up to 80%.

The primary tasks and functions of the Tornado are to aerate and de-stratify the water column and add ozone directly to the water column. Other tasks are completed simultaneously breaking up sludge deposits into smaller particulates, de-stratifying the water

column, producing high levels of dissolved oxygen. O<sub>3</sub>/"Ozone", That is one of the strongest oxidants and sterilizer available without the use of chemicals and reoccurring cost.

All 3D Kleen tornadoes draw water into the device by means of the Venturi effect with no bottom scoring and no negative affects to equipment. Water is then expelled through the upper chambers. This process creates a vacuuming effect drawing sludge deposits into the process chamber where they are injected with high levels of oxygen and ozone.

This process accelerates the digestion of heavy sludge deposits that are sitting dormant on the bottom of the station. The aeration tubes are designed to deliver a unique combination of coarse medium, and fine bubbles which when released at a specific depth, draws the water in through the bottom of the unit. Water is pulled upward and O<sub>3</sub> injected on all sides being redirected into a flow across the highly oxygenated upper portion of the water column.



Picture: Kleen O<sub>3</sub> Ozone Manifold and control's Front view

# How It Works

The 3D Kleen Tornado and O3 manifold injects high volume, low-pressure air through a specially designed multi chambered air manifold located at the bottom of the unit. This unit creates a surface current up to 3 knots.

Using a unique combination of coarse air and fine air bubble aeration, we can move high volumes of water while at the same time transferring high volumes of dissolved oxygen and O3 throughout the water column. The fine air bubbles maximize the oxygen and O3 transfer while the coarse air bubbles provide maximum velocity. When released at a specific water depth within a confined space allows for a highly efficient aeration and mixing. Each Unit is custom built for your Municipal Station volume. Will convert F.O.G. into carbon dioxide and water and helps treat PFAS.



Picture: Floating 3D Kleen tornado

## Features

- Increases Dissolved Oxygen
- High Volume Water Flow
- Eliminates F.O.G.
- Reduces COD & BOD
- Reduces MOST Heavy Metals
- Reduces MOST VOC'S
- Reduces Ammonia
- Oxidizes Hydrocarbons
- De-stratifies the Water Columns
- No Chemicals needed
- Reduces Maintenance Costs Up To 85%
- Reduces Sludge Build-Up Up To 75%
- Reduces Fecal Coli Form
- Reduces Pharmaceuticals
- Reduces H2S
- Pretreats water by up to 80%

# 100% Satisfaction Guaranteed!

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