



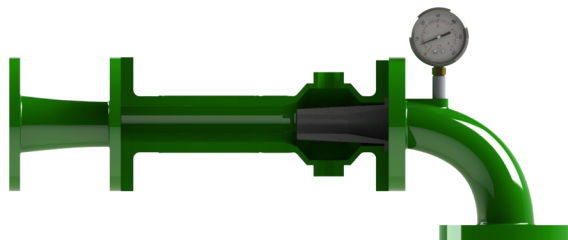
Providing Treatment Solutions for Air, Water, & Land

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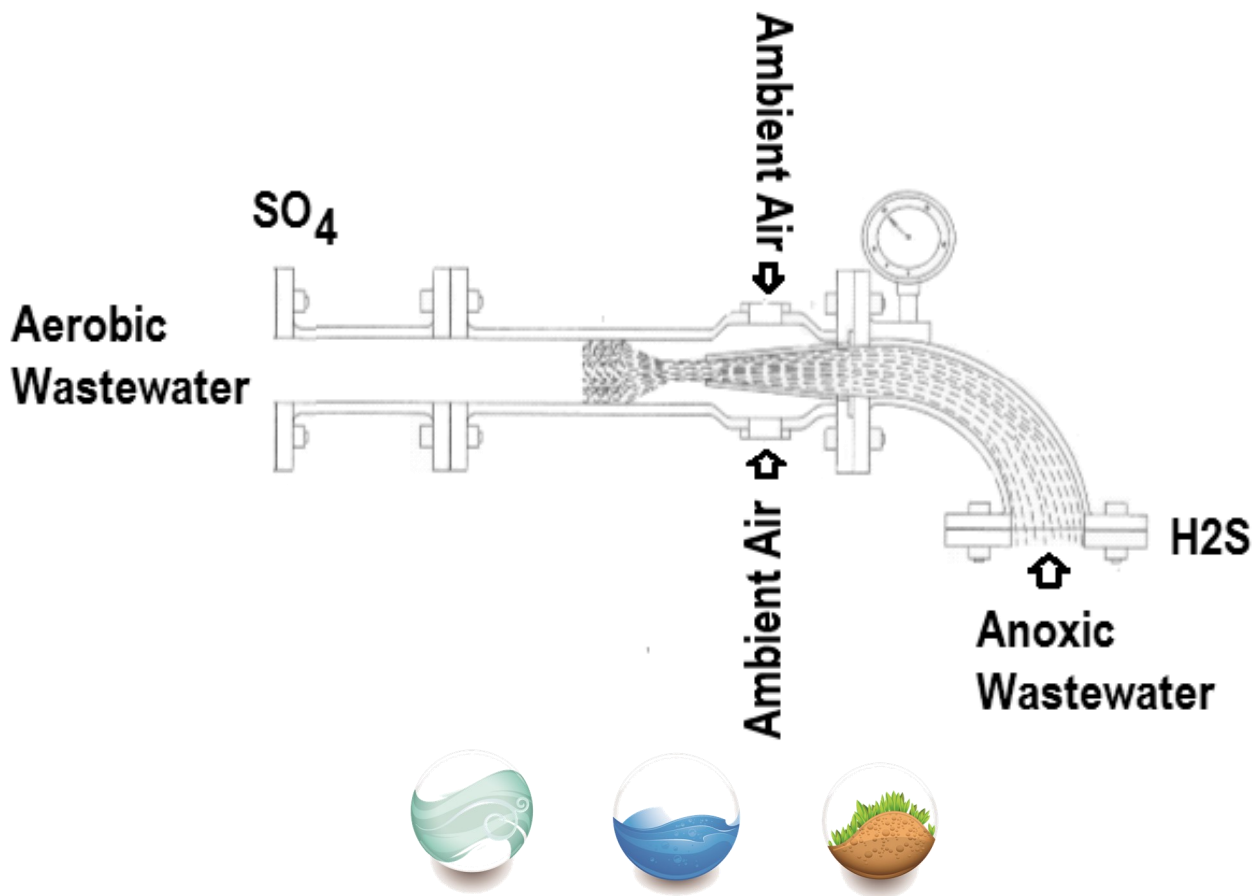
## Collection Systems

### Eliminating Odors & Corrosion in your Wastewater Collection System Using Nothing but Air



The Oxygenator system is the most efficient and effective means of eliminating Hydrogen Sulfide in the collection system and prevent it from forming, and has been so for over 40 years. The system is simple to install and simple to operate.

Unlike some products in the market today, this approach does not require complicated pressure vessels or the storage or production of oxygen on site nor do we push pressurized gases into your forced main. Our system consists of a pump and an Oxygenator Nozzle and it works every time it is tried.



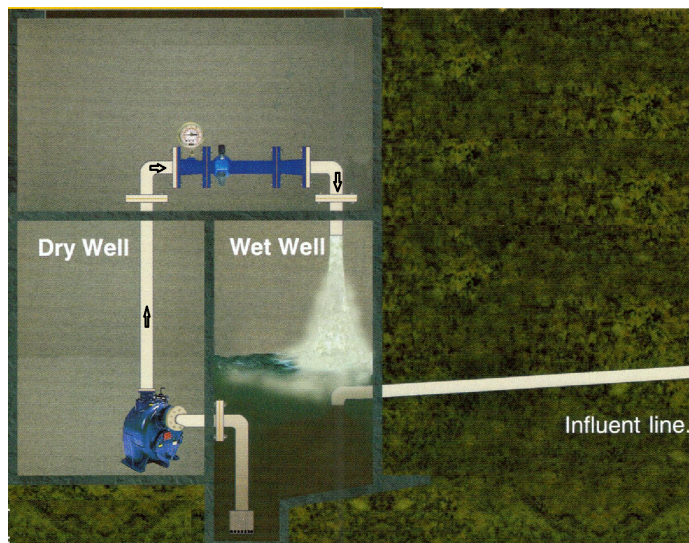


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## How does the system work for you?



The system recirculates Wastewater through the Oxygenator and sends it back into the wet well. This simple system direct oxidizes the existing Hydrogen Sulfide ( $H_2S$ ) to form  $SO_4$  (sulfates) which are dissolved back into the process. We also introduce sufficient dissolved oxygen into the wastewater to prevent the future formation of  $H_2S$ .

Pumping/Lift Stations come in a variety of shapes and sizes. While the concept for using the Oxygenator is the same, the design for the system is based on the station and the customer's preferences. The Oxygenator system works every time it is tried and has been doing so for 40 years. But we take nothing for granted

- ☁ **Simple:** Our system has 2 or 3 components, Pump, Oxygenator and starter panel.
- ☁ **Cost effective:** we are a fraction of the cost of systems that use cones or saturators
- ☁ **Good investment:** typical ROI/payback is 6 -9 months when compared to chemical injection
- ☁ **Gas free:** we do not leave any entrained gases in your wastewater.
- ☁ Converts the environment to an aerobic state which helps reduce solids as well as BOD
- ☁ Delivers the bacteria in an active and aerobic state reducing the load on the plant and reducing  $H_2S$  at Headworks
- ☁ No harsh or hazardous chemicals - safe for your system and your staff
- ☁ Does not put anything in the wastewater that needs to be dealt with later on



Self Priming



Submersible



Dry Pit





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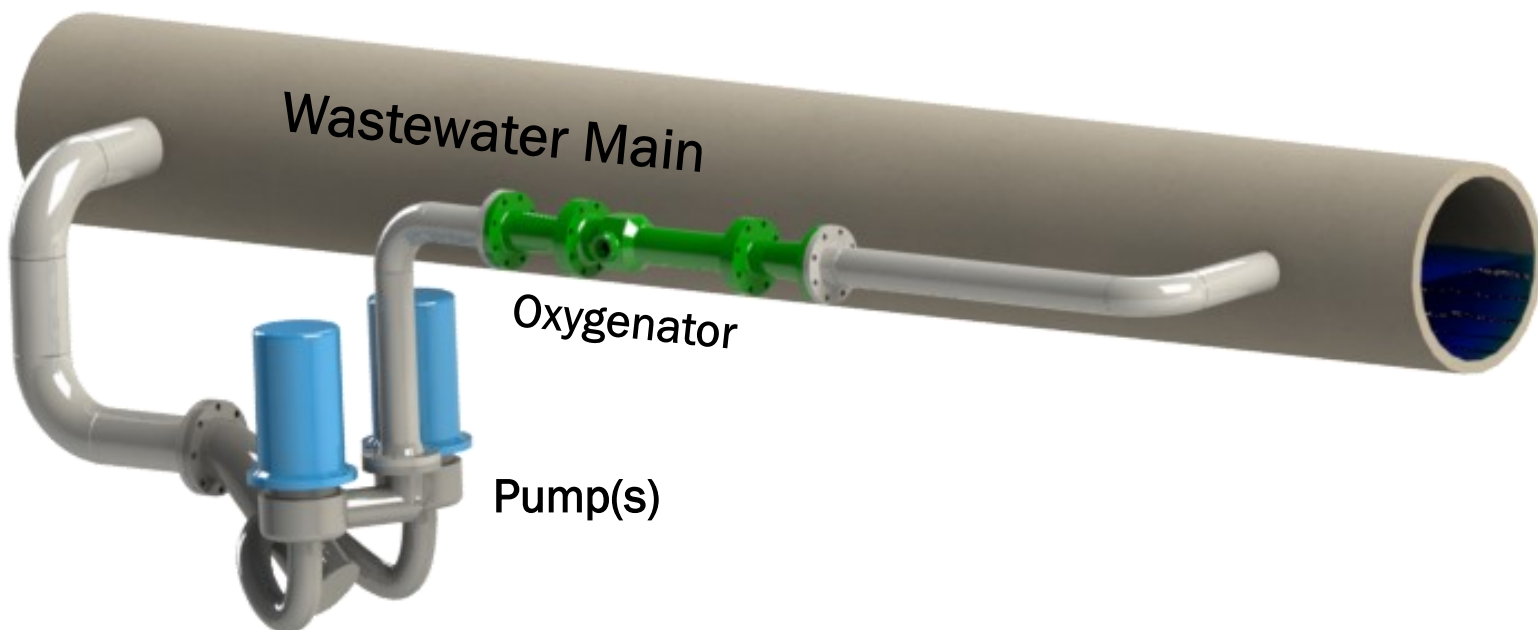
## For the Pipeline

The Oxygenator has been applied to pump stations for over 40 years but we have always been restricted to locations where there is a wet well or storage tank. Theia has now developed a design which allows us to address locations where there is not an existing pump station or tank.

This design can be implemented along long gravity mains or in forced mains with some restrictions. The Oxygenator does not rely on backpressure to eliminate  $H_2S$  or to convert the environment in the main from anoxic to aerobic and to sustain that environment for 4-8 hours.

This design can be implemented using a small tank or a dry pit using our inline pumps. These pumps are designed to pump from a gravity sewer and will be designed to create only the pressure required for the Oxygenator.

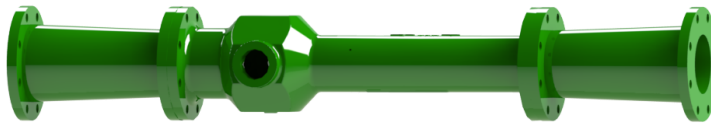
When applied to gravity sewers, our system will NOT pressurize it. The system is designed based on the normal flow rate through the line. For forced mains, we can simply boost the pressure and then blend the aerated wastewater back into the system.







## Headworks



The Headworks of wastewater treatment plants are typically the worst place in the plant in terms of odors and corrosion. Hydrogen Sulfide, formed during long retention times in the collection systems, are released as this sewage encounters turbulent conditions of the headworks complex.

The Oxygenator is typically applied, upstream of the Headworks. By aerating some or all of the wastewater at a point prior to the head-works we eliminate the Hydrogen Sulfide and prevent odor and corrosion at the head-works. Competitive technologies can prevent formation of  $H_2S$  but do nothing

about the existing  $H_2S$ . The Oxygenator will directly oxidize existing  $H_2S$ . Additionally, we do not need any backpressure from the main to allow us to saturate the wastewater with oxygen or eliminate the  $H_2S$ . thus, we can utilize the Oxygenator literally right before the Wastewater enters the plant.

### Advantages:

- ☁ We eliminate existing  $H_2S$  and prevent it from coming back
- ☁ Our design is simple and easy to implement
- ☁ We use ambient air and not produced Oxygen
- ☁ The Oxygenator is proven, in place for over 40 years
- ☁ The Oxygenator can be applied almost anywhere. We do not need a high pressure main
- ☁ Activate & Aerate: the sewage arrives in the treatment plant active and saturated with DO (dissolved oxygen) ready to get to work taking some of the load off the existing aeration system
- ☁ Reduction of BOD & Solids. The biology is jump started allowing it to start consuming the solids as well as the organic food

