

# CASE STUDY

## SEABOARD- TRIUMPH FOODS



### SITUATION

- The Plant's wastewater treatment facility uses four, covered anaerobic lagoons to manage BOD, pretreating wastewater prior to sending the effluent to a pumping station which directs the wastewater into the municipal collection system for final treatment at the City's wastewater treatment plant.
- The Company used hydrogen peroxide and a catalyst to maintain an aerobic environment and mitigate odor from the facility's wastewater.



### COMPLICATION

- The use of hydrogen peroxide and a catalyst was unable to adequately mitigate the odor from the facility's wastewater.
  - Residence complained about the odor emanating from City sewers as the effluent travelled from the plant to the City's wastewater treatment facility.
  - City managers were concerned about accelerated corrosion from the resulting formation of sulfuric acid ( $H_2SO_4$ ) in the City's sewers.



### RESOLUTION

- Replaced chemical treatments of hydrogen peroxide and a catalyst with SDOX® technology to mitigate sulfide production by promoting an aerobic environment in the facility's wastewater effluent. (See figure 1.)



### BENEFITS



- Eliminate virtually all hydrogen peroxide chemical treatments and approximately \$3.6 million in total annual chemical costs.
  - One-year NPV in excess of \$1 million, a five-year NPV of almost \$8 million, and an internal rate return of more than 300%.



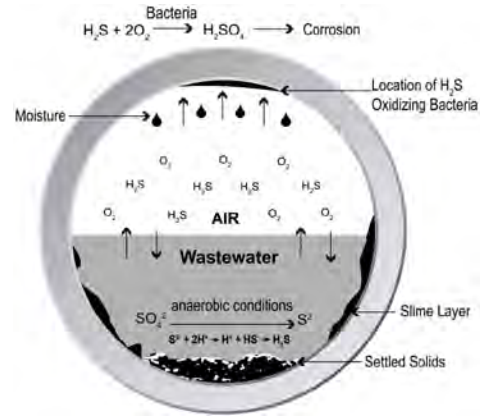
- Eliminated the distinct "rotten egg" odor from the community sewers.



- Eliminated the build-up of corrosive, poisonous, flammable hydrogen sulfide ( $H_2S$ ) gas in the City's sewers that was responsible for the formation of sulfuric acid corroding the City's collection infrastructure. (See figure 2.)



**Figure 1:** Drawing from a vertical, liquid oxygen tank, a containerized SDOX® unit oxygenates the wastewater in-pipe as it flows from the facility’s anaerobic lagoons before being pumped at a lift-station into the City’s collection system and eventual wastewater treatment plant. By maintaining an aerobic environment, the SDOX® unit mitigates odor and corrosion within the City’s collection systems while reducing the Company’s annual chemical treatment costs by an estimated \$3.6 million.



**Figure 2:** Hydrogen sulfide (H<sub>2</sub>S) forms in anaerobic conditions. It is a poisonous, flammable gas with a distinct “rotten egg” odor. Anaerobic wastewater rich in H<sub>2</sub>S results in the formation of sulfuric acid in city collection systems, creating serious corrosion issues.



## ECONOMIC/OPERATIONAL

- Improved treatment
- Reduced chemical costs
- Reduced maintenance costs
- Reduced operating- + brand-risk
- Operational continuity
  - Retrofit without interrupting operations



## SOCIAL/COMMUNITY

- Enhanced odor control + social license
- Reduced corrosion of collection infrastructure



## ENVIRONMENTAL

- Improved water quality

