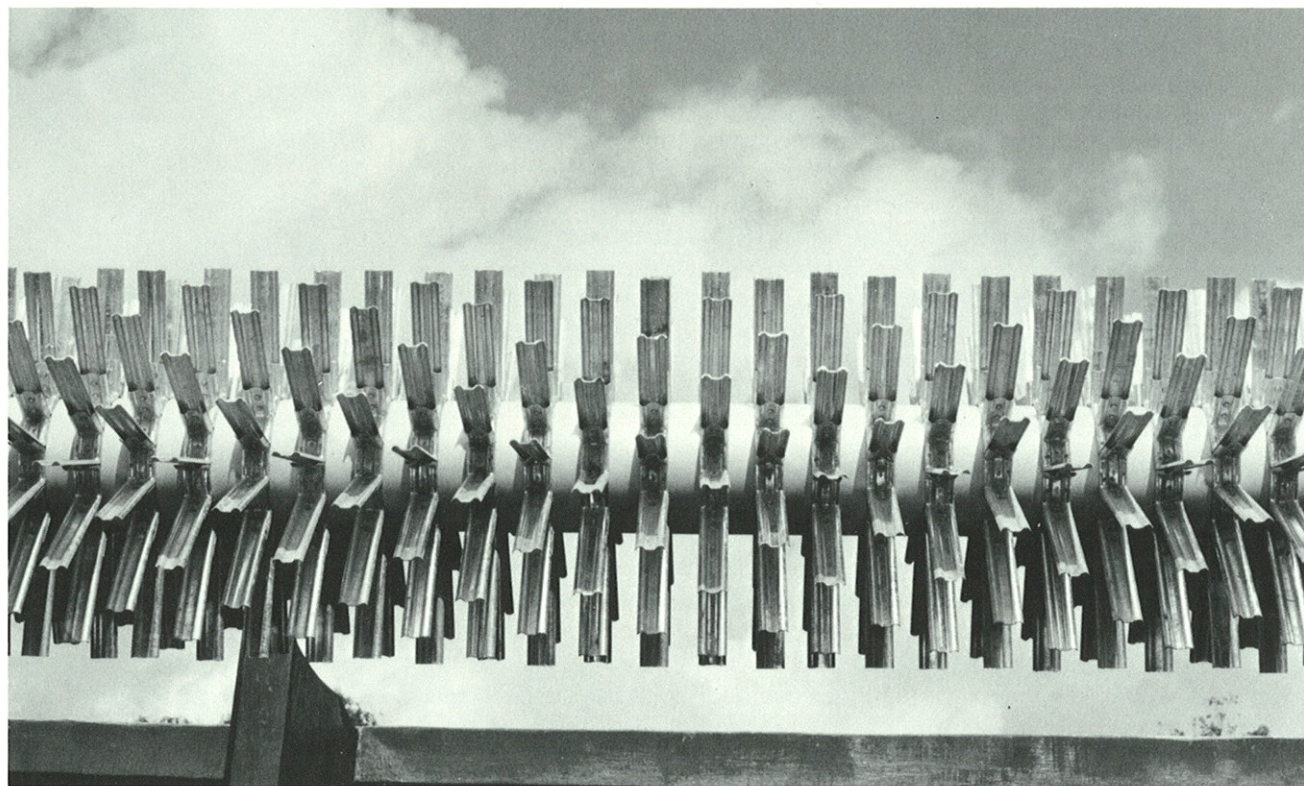


The

Airbrush

Rotor Aerator



United
Industries, inc.

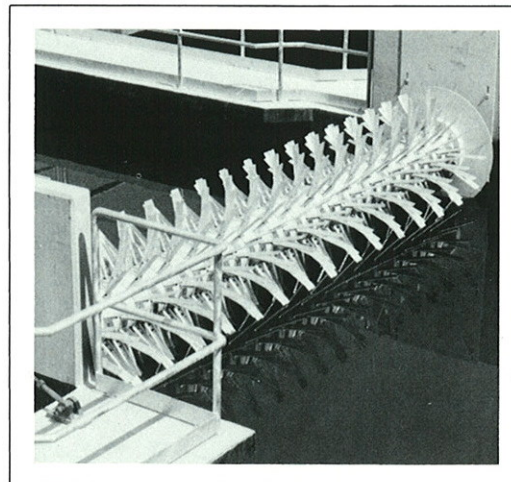
Innovative Water & Wastewater Technologies

The *Airbrush*™...

A Brush Rotor for aerating oxidation ditch systems...

GENERAL

The first oxidation ditch was placed into successful operation in 1954 in the country of Holland. Since this original installation, a tremendous amount of interest in this process has arisen among owners, operators, and engineers. The applications of this process may vary to fit an individual's preference for geometric shape, as well as the selection of aeration/mixing equipment. A majority of these applications employ the extended aeration version of the activated sludge process in which the basin volume provides a lengthy hydraulic detention time (18-24 hours). A long solids retention time (20-30 days) is normally incorporated into the design. The oxidation ditch has proven to be very successful in meeting advanced standards established for final effluent concentrations.



BIOLOGICAL PROCESS

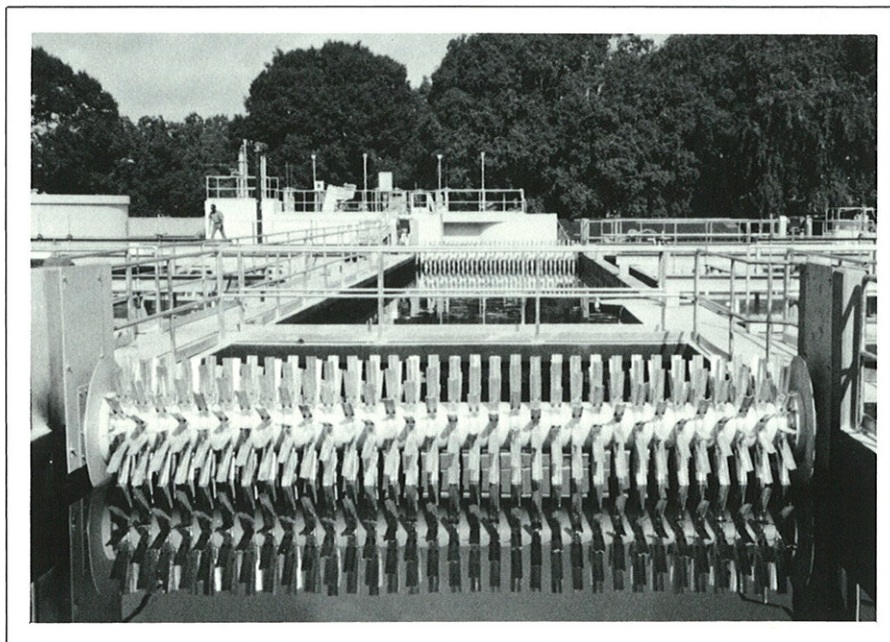
The most important part of an activated sludge process is the aeration device which must provide oxygen to the living organisms. In order to accomplish this efficiently, the aeration device must be capable of transferring oxygen from the atmosphere to the liquid. It must also maintain rapid and complete mixing of the micro-organisms with the oxygenated liquid. Simultaneously, it should keep the sludge in

suspension, and equally important should provide complete, uniform mixing throughout the bulk of the liquid. Only by performing both the mixing and aerating functions equally well, will efficient treatment be obtained. In aerobic treatment processes, the polluting material is removed by micro-organisms, mainly bacteria. In some cases, certain species are characteristically suitable for the removal of spe-

cific types of chemical substances. Various types of protozoa are also present and feed on these bacteria. Thus, a balance is obtained leading to the growth of a sludge which is a mixture of viable organisms, remains of dead organisms and inert material. Suspension of the sludge in a liquid culture forms the activated sludge process.

AERATION DEVICES

The brush rotor has been specified more than any other aeration device for service in the oxidation ditch system. The **AIRBRUSH™** was developed to meet all of the biological needs of the extended aeration process. The durable construction will provide years of reliable service. The **AIRBRUSH™** can be used in new construction or for replacing older, less durable aerators without requiring structural changes.



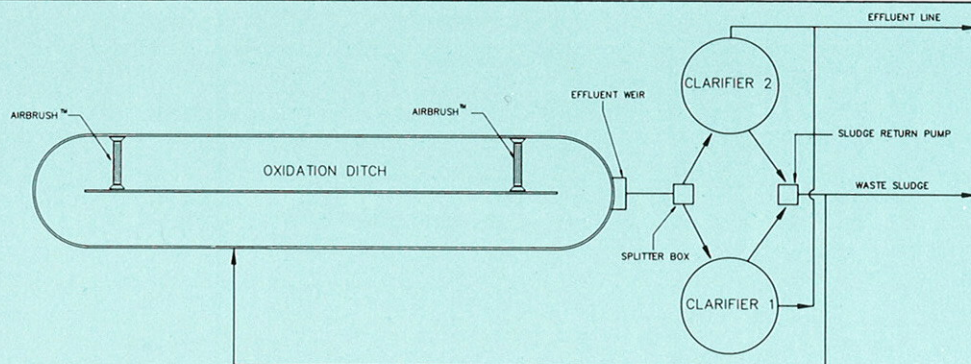
...with external or intra-channel clarifiers

CLARIFICATION ALTERNATIVES

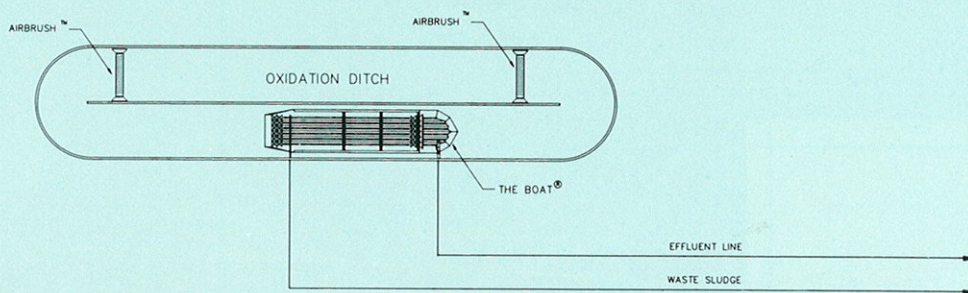
The oxidation ditch system has developed into one of the most efficient, cost-effective treatment processes in the world. With the proper equipment this system has the unique capability of meeting advanced-secondary effluent limits on a continual basis. If external clarifiers are utilized, the **AIRBRUSH™** and an adjustable effluent weir can be combined to maximize the potential of the racetrack design.

However, if a reduction in capital, O&M and energy costs are desired, the patented **BOAT CLARIFIER®** would be the natural selection to use with the **AIRBRUSH™** aerator. This highly efficient rotor aerator will supply the exact amount of oxygen required for either system. While the oxygen is being delivered to the mixed liquor, the proper mixing velocity will automatically be established.

EXTERNAL CLARIFIER LAYOUT



THE BOAT CLARIFIER® LAYOUT

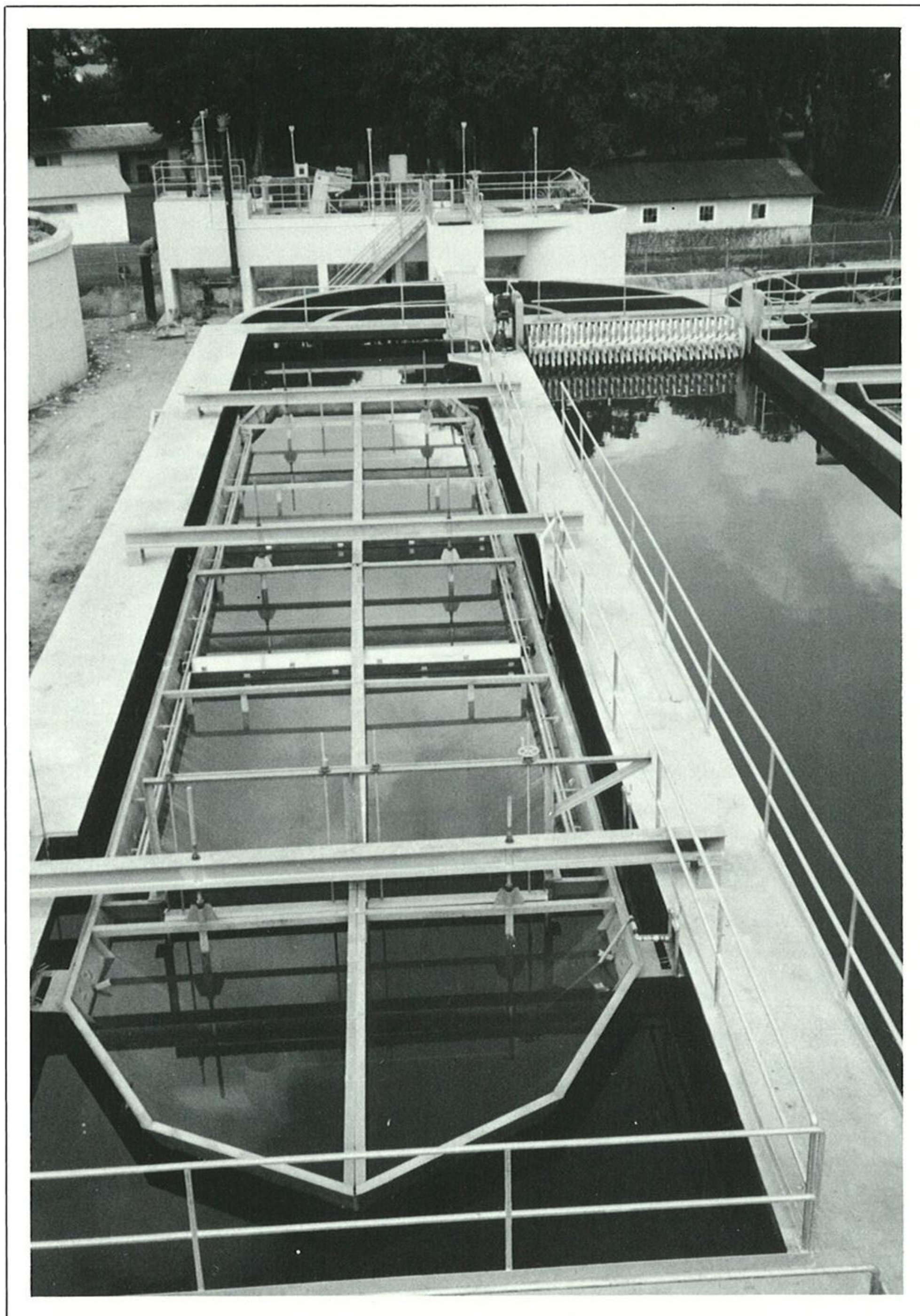


ADVANTAGES & BENEFITS

Simple, Durable Construction	Low Capital and O&M Costs
No Underwater Parts and Bearings	No Rag Accumulation, Low Maintenance
Provides Complete Mixing & Aeration	No Ancillary Equipment Needed
High Oxygen Transfer Efficiency	Low Energy Costs; High BOD ₅ Removal
Available with either Protective Coating or in Stainless Steel	Reduced Corrosion Problems
Can be Designed to Prevent Misting, Splashing and Aerosols Open to the Air	Can Operate in Sub-Zero Temperatures
Can be Used with the BOAT CLARIFIER®	Lowest Possible Construction, O&M, and Energy Costs

Brushes 'n Boats...[®]

Quality and Reliability...



From a Single Source!

**G J Beard International
&
United Industries, Inc.**