



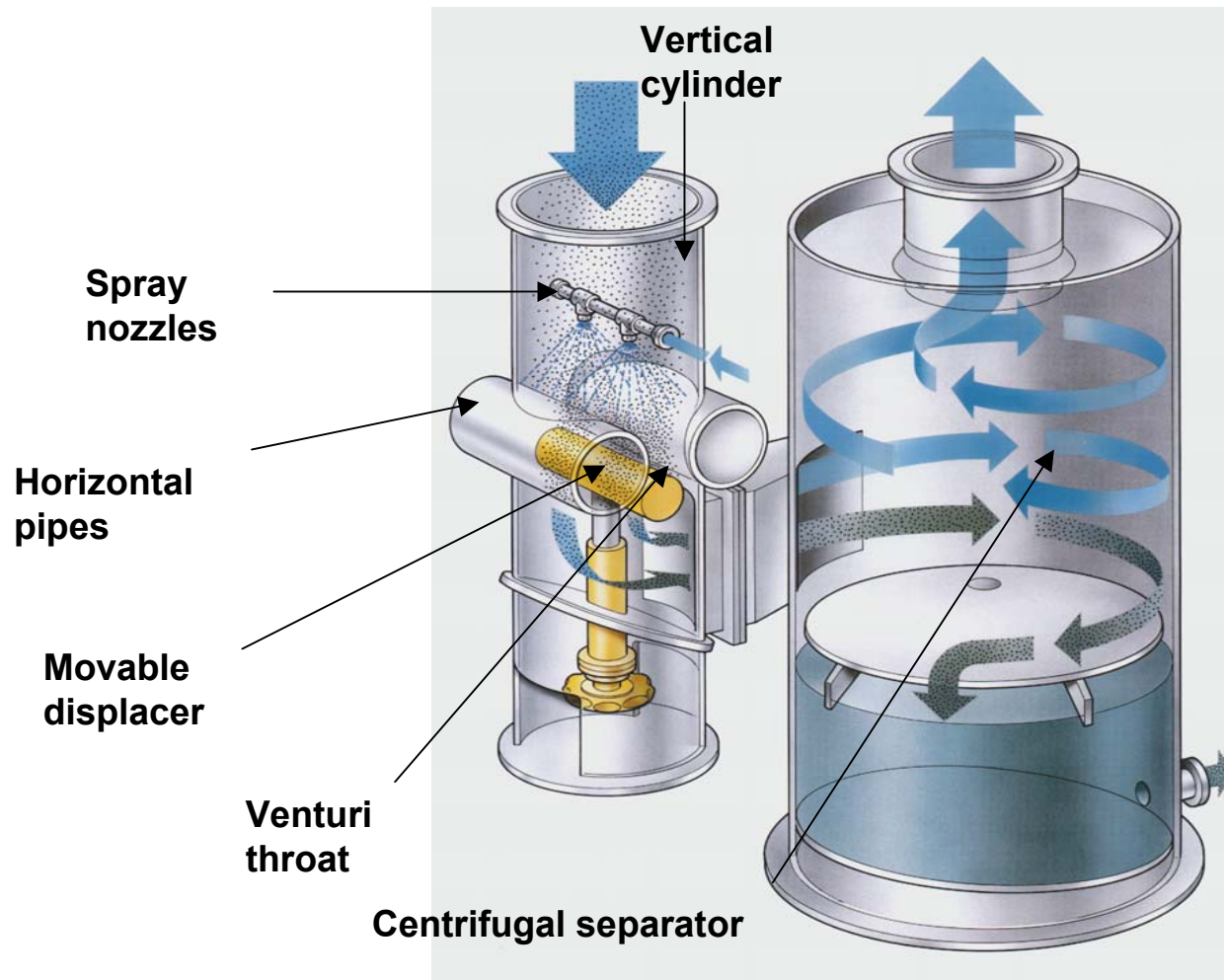
ALTECH TECHNOLOGY SYSTEMS INC.

*INTEGRATED SOLUTIONS FOR BUSINESS
AND THE ENVIRONMENT*

Technology-based Solutions

- ✦ Pollution control equipment design & selection.
- ✦ Patent licensee for System Reither Venturi Air Scrubber
- ✦ Air: Venturi scrubbers, packed towers, cyclones, demisters, tray scrubbers, carbon, etc.
- ✦ Focused process understanding and experience.
- ✦ Applied design, manufacturing, installation, integration & maintenance.
- ✦ Recovery and re-use of products & by-products.

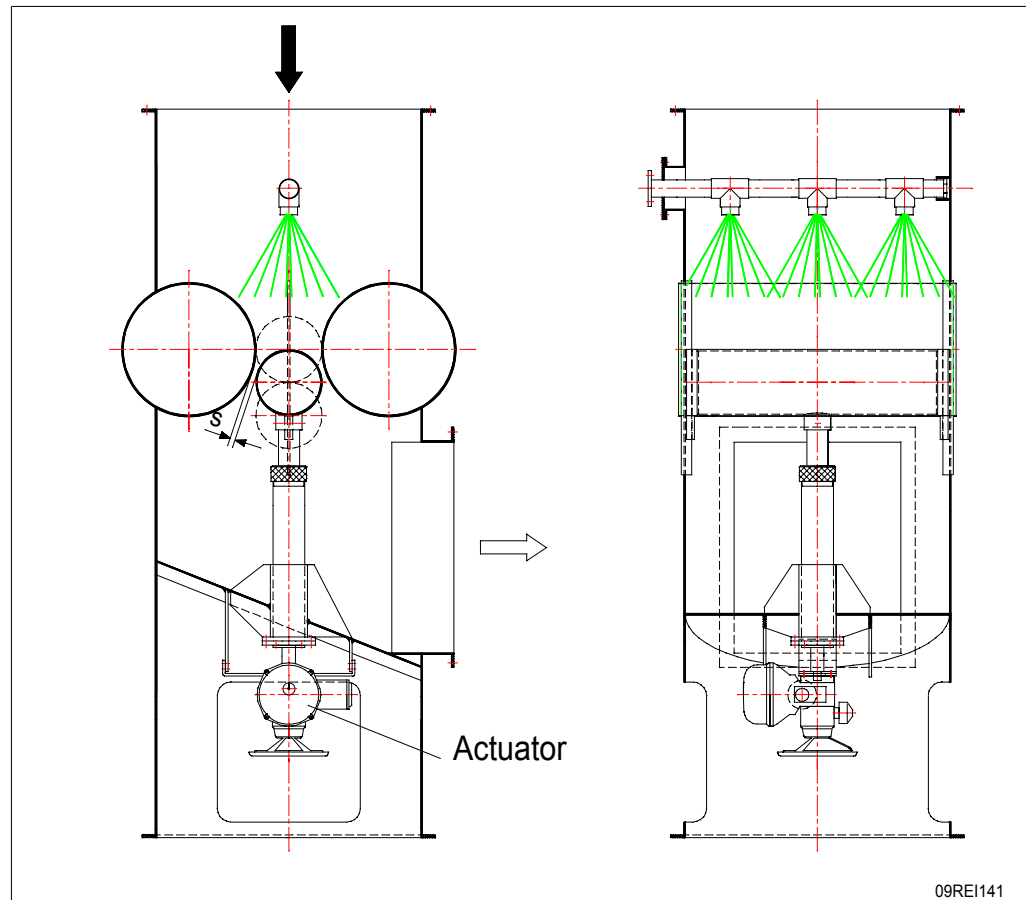
Schematic of the System REITHER Venturi scrubber



System REITHER

Venturi Scrubber

principle of operation



ODOUR CONTROL

- ✱ Accurate characterization of odour required.
- ✱ Identify specific chemical compounds causing the concern.
- ✱ Determine chemistry, form or state, and dynamics.
- ✱ Target emission control technology.
- ✱ New advances in venturi scrubber high removal efficiencies for a broad range of fine particulate, aerosols, mists, selected gases and VOCs.
- ✱ Venturi scrubber atomizes scrubbing fluid creating a large surface contact area to efficiently capture airborne contaminants instantaneously.

Case Studies for Odour Control

Process	Application
Brewery	☀ Release of aldehydes and terpenes - Easily condensed and removed by wet scrubber.
Vinyl Manufacturing	☀ Release of plasticizers gas and light VOC's from casting oven - Quench stream to condense plasticizers and scrub with venturi.
Spice Blending	☀ Release of spice as particulate – Venturi scrubber to remove fine particulate.
Foundry Die Casting	☀ Fumes contain ammonia, formaldehyde and phenols, removed with dilute sulphuric acid, caustic and hydrogen peroxide in scrubbing fluid.
Tobacco Roasting	☀ Odorous VOC's scrubbed with dilute caustic and hydrogen peroxide in wet scrubber

Case Studies for Odour Control

Process	Application
Coatings Manufacturer	☀ Styrene odour removal with dipropylene glycol as scrubbing fluid. Styrene recaptured in knock out drum.
Printing	☀ Release of light VOC's and paper dust Co-scrub paper dust and VOC with venturi scrubber
Chicken Processing	☀ Release of ammonia, dander etc. from chicken receiving area, Co-scrub contaminants with venturi scrubber to remove PM 2.5 and ammonia.
Sewage Plants	☀ Release of hydrogen sulphide and ammonia – Venturi scrubber with caustic and peroxide to oxidize H ₂ S to sodium sulphate

Odour Control Municipal Sewage Pumping Station

- ✱ Nuisance odour complaints in residential area.
- ✱ Conducted pilot study, monitor H₂S at inlet and outlet over two day period with portable H₂S monitors.
- ✱ Scrubbing fluid: 1% caustic, 0.5% peroxide, and clean water.
- ✱ Inlet levels 20 – 120 ppm H₂S recorded.
- ✱ Outlet levels H₂S - 0 ppm over trial period,
- ✱ >99% removal of odorous H₂S.
- ✱ No other detectable odours were present at outlet.

Municipal Sewage Pumping Station



Wet Well



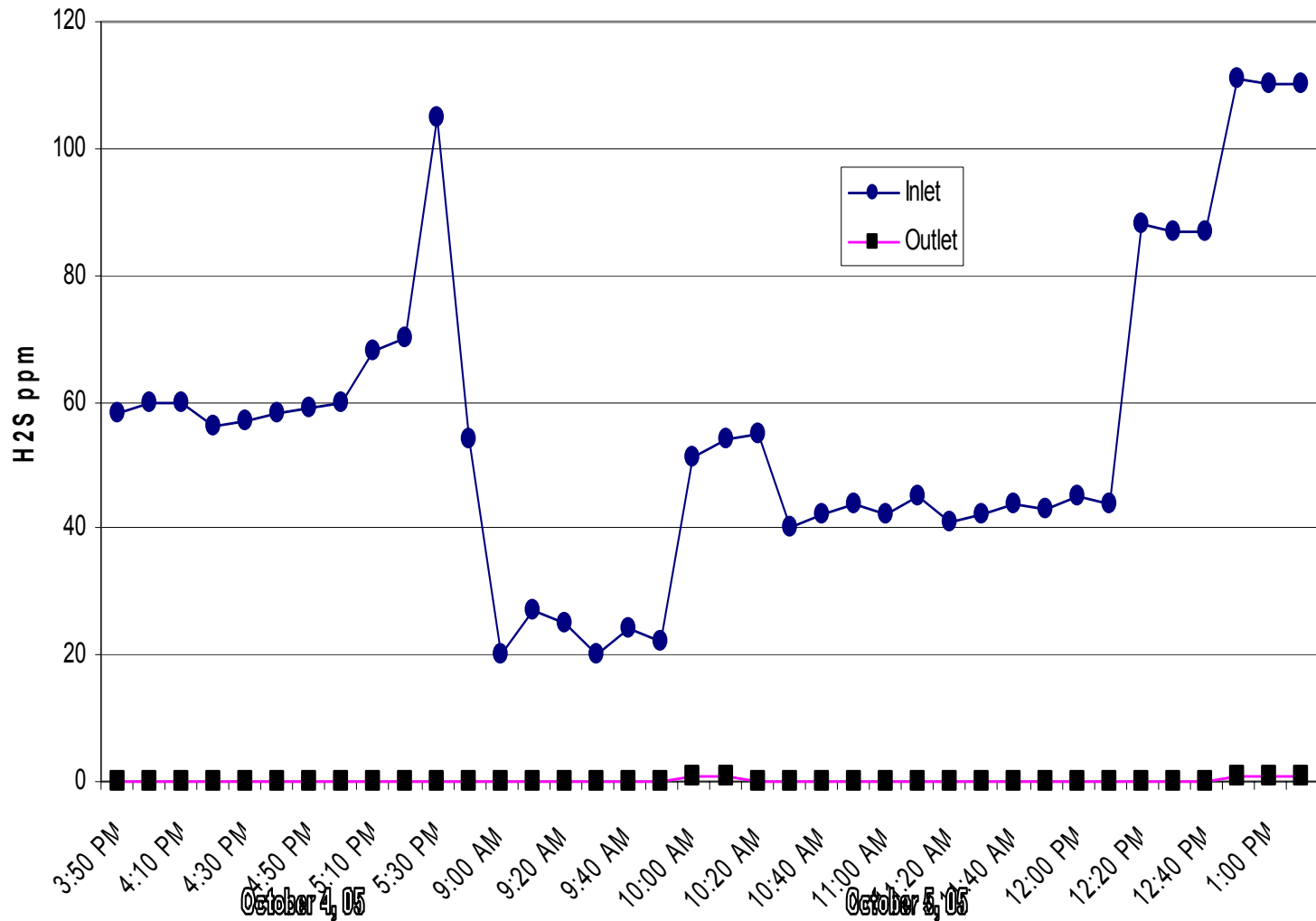
Pumping Station Building



Pilot Plant



H₂S Removal Rates Municipal Sewage Pumping Station



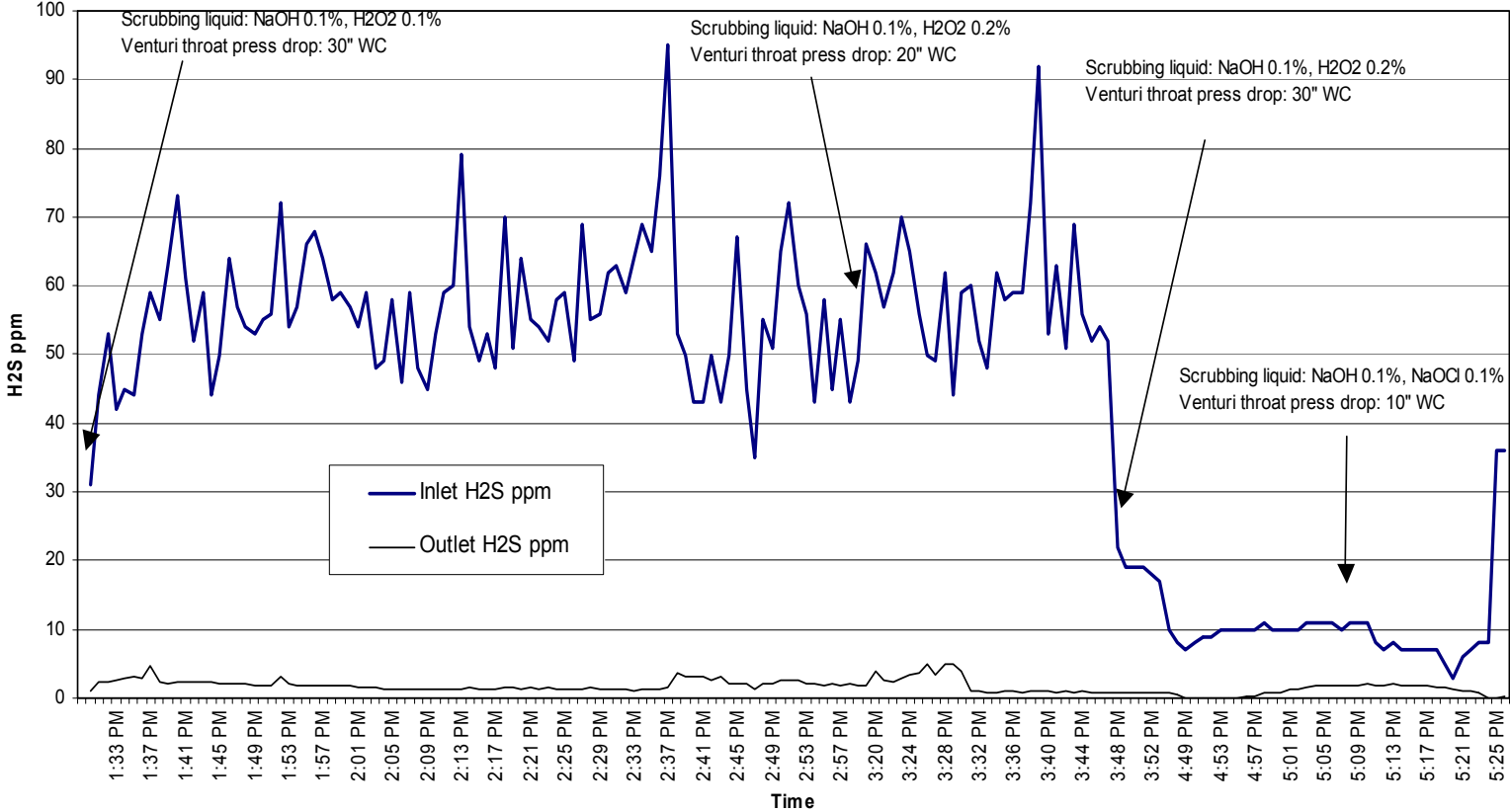
Odour Control

Industrial Wastewater Treatment Plant

- ✦ Numerous odour complaints from wastewater treatment plant of milk processing facility in San Antonio, Texas.
- ✦ Odours from hydrogen sulphide, organic acids, and spoiled milk.
- ✦ Conducted pilot study, monitored H₂S with portable gas monitor, inlet readings up to 110 ppm.
- ✦ Dilute H₂O₂ and NaOH showed 99% removal of H₂S, no other odorous compounds detected at outlet.
- ✦ Installed a 30,000 cfm System REITHER venturi scrubber to treat all exhausted air from WWTP.

H₂S Removal Rates From Pilot Study at WWTP at Milk Processing Plant

Figure 2
System REITHER test January 10, 06



Milk Processing WWTP



30,000 cfm System Reither



Aerated Primary Reactor



DAF Tanks



Odour Control for Ethanol Plant

- ✦ Supplied 30,000 cfm System REITHER air scrubber to control fine dust and ethanol vapours from corn dryers at an ethanol plant in Ontario.
- ✦ Plant received odour complaints from residential neighbours.
- ✦ Odours sources were located in the plant and vented to the scrubber inlet for treatment.
- ✦ With improved material management and treatment with the air scrubber the plant no longer receiving odour complaints.

Ethanol Plant System REITHER Air Scrubber



Advantages of New Scrubber Technology

- ★ High removal efficiencies for odorous fine airborne particulate, moisture vapours, aerosols, selected gases and VOCs
- ★ Small foot print, modular design, single stage scrubber easily retrofit existing systems.
- ★ Low operating and maintenance needs well adapted to remote locations.
- ★ Low water and chemical usage
- ★ Custom designed for 100 – 100,000 cfm air flow.
- ★ No fixed media to replace, no channelling or breakthrough.
- ★ Wide choice of construction materials for corrosive environments.



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