

# PRODUCTS AT WORK

VERTICAL WET SCRUBBER SYSTEM

## PT-500 Series Scrubbers Eliminate Odors In Houston Neighborhood

### Background

With their neighbors having "...OSHA limit H<sub>2</sub>S odor levels on their doorsteps", the 69th Street WWTP, in Houston, Texas, knew they had a problem. With the help of Montgomery Watson, the City of Houston looked to find the most effective solution to this problem. Chemical scrubbing was the obvious answer. However, concerns about chemical usage, ease of operation, system flexibility for future needs, and a material of construction that could stand up to the corrosive application and harsh environment of the region were also paramount to the city. With over 36 years of experience in wet scrubber system design and numerous scrubber system styles – including packaged low-profile units, vertical packed towers, and horizontal scrubbers – Duall was sure to have a solution.

### Results

A vertical packed tower design was selected to best achieve the flexibility required to attain 99.99% removal efficiency on H<sub>2</sub>S. The 40,000 CFM, counter-current, flanged vessels utilized can easily be modified for even higher efficiency requirements. The three ten-foot diameter towers in series were also designed with a unique sump and chemical feed arrangement that would give the city chemical feed system flexibility, and also provided optimum chemical usage efficiency, saving them in operating cost.

DUAllast™ construction with its PVC corrosion barrier offers the widest range of corrosion resistance to acids, alkalis, and oxidants often utilized with complex wet scrubber chemistries. DUAllast™ equipment provides superior resistance to highly corrosive hypochlorous acid that may develop unintentionally during upset conditions if the pH of the scrubbing liquor drops significantly.

On selected applications involving the treatment of complex odors such as pharmaceutical fermentation and composting, the PVC liner is the ideal corrosion barrier when the system is intentionally designed to operate with acidic hypochlorite. The PVC liner provides a durable, long lasting corrosion barrier that is consistently 8 to 10 times thicker than conventional fiberglass resin rich barriers with synthetic veils.

The equipment was designed for seismic zone 1, and 120 MPH wind load requirements. The exterior surface of all equipment included a UV stabilized topcoat. All equipment was designed and constructed at the Duall Division manufacturing facility in Owosso, Michigan.

### Present Status

The scrubbers were put into service in April 1999, and continue to operate as designed. The scrubber system also includes fans, chemical metering pumps, recirculation pumps, storage tanks and ductwork.



**Application:** H<sub>2</sub>S Odors

**End User:** City of Houston WWTP  
69th Street & Old Clinton  
Houston, Texas 77011

**Reference:** 7582-98

### PT-510 Wet Scrubbers DUAllast™ FRP/PVC Construction

**Engineer:** Montgomery Watson

**Reference:** N & S Construction Co., LLC



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