MONROE NATER & Wastewater Treatment | Air Pollution Control

WET SCRUBBER REBUILDS & RETROFITS

Why Rebuild or Retrofit Existing Wet Scrubbers?

Before you make a large capital expenditure on a new wet scrubber, consider a "Scrubber Rebuild". **Monroe Environmental**® trained experts can assess your existing equipment and determine if a "Scrubber Rebuild" is a more cost-effective solution.

Rebuild Existing Wet Air Scrubbers for:

- Increased efficiency
- Long-term performance
- Cost savings
- Maximized uptime

Scrubbing system rebuilds and service maintenance plans can go a long way to extending the life of your existing pollution control equipment.

At Monroe Environmental, we're experts in troubleshooting and rebuilding competitor units to bring them up to like-new efficiency and performance standards. With Monroe's expertise, a system that is currently under-performing can be made into a satisfactory, efficient scrubber through new parts, instrumentation, repairs, and service.

Scrubber Rebuild vs. New Purchase

Do you have an existing wet air scrubber that has fallen into disrepair or become less efficient? If so, should you buy a new scrubber?

Oftentimes the exterior of your existing scrubber is in good condition, but the internals, pumps, instruments, and piping have fallen into disrepair. Replacing and/or reconditioning internal parts as well as exterior piping and instruments will extend the life of your equipment.

The Benefits of a Wet Scrubber Rebuild



Equipment that performs like new at a greatly reduced cost compared to the price of new equipment – savings of up to 70% are possible.



It already fits into your plant layout versus trying to set new equipment into an already limited floor plan.



Faster project schedules and less downtime versus waiting several months for a new system. New systems require longer installation at site (average 2 – 3 weeks) versus a few days downtime and limited disruption to your plant's production with a scrubber rebuild.



Existing permitting can often remain in place. Compliance requirements are to the standards of the previous equipment, and not a new system. The cost of new permits plus emission testing can be greater than \$10,000 versus lower costs of existing permits.

Wet Scrubber Rebuilds: Recent Projects

The decision to rebuild or purchase a new wet air scrubber is a big decision. Other scrubber providers are typically unwilling to tackle the problems of another manufacturer's equipment...but not Monroe Environmental. Our engineers and field service team can improve the quality and operation of nearly any existing scrubber, at far less cost than purchasing a new system.

Typical Wet Scrubber Rebuild Services

- Clean Scrubber inside and out
- Replace recirculation pump, instruments, and valves
- Repairs to cracks on tower
- Replace piping and external parts damaged by corrosion
- Additional access panels to allow for future cleaning/improved maintenance (if needed)
- Training for newly rebuilt scrubber available for operators and maintenance staff.

Packed Tower Scrubber: Nitric Acid Fume Scrubber Rebuild

A medical implant manufacturer had noticed a steady decline in the effectiveness of their fume scrubbing system. Low flow and low efficiency led to inadequate control of nitric acid fumes. Monroe was called to assess the system and make recommendations. It was determined that a rebuild of the existing scrubber (non-Monroe) was the fastest, most cost-effective solution.



Before (Photo 1): A build-up of bacteria and particulate, as well as overheating and pipe corrosion rendered the customer's scrubbing system ineffective.



After (Photo 2): A system rebuild by Monroe's Service team transformed this competitor's failing system to an efficient Monroe Scrubber.



Dual Throat Venturi: Rebuild After Years of Hard Use

A wood finishing mill that specializes in hardwood flooring and other high end carpentry had put its Dual Throat Venturi Scrubber through years of hard use.

After (Photo 1): Monroe reinforced the scrubber body where it was leaking from the drag conveyor wearing through, replaced the mist eliminator supports, replaced the venturi access doors, replaced the venturi throats, replaced all door gaskets and fasteners, and painted the unit.







Before (Photos 2, 3, 4): After years of 24/7 service, a high inlet gas temperature of 350°F, high inlet loading of abrasive particulate, and lack of a sewer drain connection, the unit had serious issues to address.



Emission Compliance for Chrome Plating Plant

A chrome plating company needed to improve their wet scrubber's ability to remove acid fumes and metal particulate from an exhaust stream produced by chrome plating tanks. Monroe engineers went to the site of the scrubber and recommended modifications and adjustments to maximize the performance of the scrubbing system. The retrofit's parts and installation included new high efficiency/low pressure drop packing media, a new high efficiency mist pad, new spray nozzles, repairs to PVC ductwork, and heavy-duty duct stands for support on the roof.

The scrubber is now highly efficient at producing an airstream with low amounts of fumes and metal particulate. Following the retrofit, it successfully passed an emissions test with measured chrome content being less than the allowable limit.

Quench Tower: Retrofit for Medical Waste Incinerator Scrubber

A site visit to evaluate an existing wet scrubbing system observed wear and tear after being in operation for almost 20 years. A replacement Quench Tower was required to be retrofit to the existing wet scrubbing system due to leaks causing excessive corrosion. Scrubber housing and internals were also in disrepair, with some components able to be updated to current technology for improved performance.

To withstand the temperatures, the new quench design included a rubber boot, new spray nozzles, and hard piping instead of the existing flex piping. Additional supports were also added to the inlet duct to reduce load on the quench tower.



Before (Photo 1): The existing Quench Tower was leaking in several areas, and the downstream scrubber was in disrepair. The FRP housing had many cracks and leaks, and scrubber internals were outdated design with low performance.



After (Photo 2): Replacement inlet quench with updated design, connecting piping and rubber boot. The scrubber FRP housing was also repaired to eliminate leaks, and scrubber internals were replaced for improved efficiency.



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