

# AirPol helps Paper Mill meet tougher Lime Sludge Kiln Emissions requirements

## Challenge: AirPol makes emissions control upgrade easy for paper mill

### Goals:

The plant, located in Georgia, needed a modification of their existing low energy (H-K) Venturi scrubber. The system, which had been in operation since 1987, was used to control lime sludge kiln dust emissions. When the system was originally built an emphasis was put on limiting the amount of power used in order to control energy savings. AirPol, which had installed the original unit, along with approximately 30 others for this company over the years, designed it to be easily upgradeable.

### Solution:

AirPol provided a flanged adjustable throat section with conical adaptors, liquid inlets and a pneumatically actuated damper to replace the original larger throat spool. In addition, AirPol provided an optimization of the existing Cyclonic Separator vessel that follows the Venturi in order to customize it for the new design saturated gas volume. This modification improved the dirty scrubbing liquid/clean gas separation efficiency and thereby the scrubber efficiency. The exhaust fan was also upgraded for the new high static pressure requirement and the high-pressure pump received a low-pressure replacement.

### Conclusion:

The retrofitted Venturi's adjustable throat is used to maintain the desired pressure drop, ensuring the proper scrubbing liquid atomization and removal efficiency. More importantly, within the limits of the available exhaust fan's static pressure (a considerable safety margin was chose)the scrubber removal efficiency can be adjusted as needed simply by changing the set point of the pressure drop controller. This will allow for future process changes and can be used to optimize power usage.



## Project at a Glance

**Application:**  
Quench/particulate scrubber

**Location:**  
Southeast U.S.

**Industry:**  
Paper Mill

**Year Installed:**  
2020