



**PROJECT SPOTLIGHT – CALCIUM CHLORIDE SCRUBBER**

Project # 10-01-02066

Typical scrubber designs limit the suspended solids concentration of the scrubbing liquor to a maximum of 2 – 5% by weight. Therefore, we knew we had our work cut out for us when a very good customer asked us to design a unit that would efficiently capture calcium chloride fines from a bulk loading operation while allowing them to recycle inside the scrubber and concentrate a liquid solution at up to 40% by weight so they could send it back to their spray dryer. To meet these requirements, FKI designed a scrubber system that utilizes low pressure tangential liquid injection pipes, a low velocity centrifugal separator, and 2 stages of mesh pad mist eliminators. The use of open liquid injection pipes, a continuous washdown on the first stage mesh pad, and an intermittent spray on the second stage mesh pad help prevent plugging. The mesh pads ensure the removal of fine concentrated solution droplets so that the customer’s emission requirements are met. Due to the highly corrosive nature of the solution, the inlet section was made of chloride resistant AL-6XN alloy, the separator was made of fiberglass, and the mist eliminators were constructed of polypropylene. The customer has been very satisfied with the results. Two units are currently in operation and a third is under construction.

Design Conditions

- Gas Flow Rate = 11,500 acfm
- Temperature = 100 F
- Contaminant = 5 gr/dscf of particulate
- Guaranteed Efficiency = 98.23% @ 3.5 microns
- Liquid injection = 15 – 25% calcium chloride solution

Why Choose an FKI Scrubber?

- \* Versatility - custom engineered for your specific application requirements
- \* Wide range of liquid injection, throat, and centrifugal separator designs
- \* Complete systems can be provided: fan, pump, piping and valves, instruments, controls, duct, stack, access steel

