

TITAN360® Reduces Condensate Line Corrosion of a Wood Kiln Boiler

Background

A Northwestern sawmill was experiencing high levels of corrosion in the condensate lines of its simple hybrid wood fuel boiler. The 150 PSI boiler, operating at 35-40 cycles with a condensate return of 55-75%, was treated with a traditional program of an oxygen scavenger, phosphate and neutralizing amines. While a high level of neutralizing amines kept condensate pH regularly within range, significant levels of soluble iron (>0.1 ppm) continued to appear in the condensate. In addition, the operators had to repair corroded steam and condensate lines monthly.

Solution

ChemTreat recommended TITAN360®, which provides a high level of corrosion protection to the complete steam cycle and effectively buffers pH without additional intervention. Also, TITAN360® is an all-in-one approach to boiler treatment, which would significantly provide an improvement to the current three chemical program.

Results

Within only two weeks of applying TITAN360® to the boiler feedwater, the level of iron in the condensate return decreased considerably. Condensate lines stopped leaking and the clarity of the boiler feedwater improved. The operators also noted the ease of applying the TITAN360® program, which did not require adjustment as the boiler increased and decreased steam production. In addition, measuring residual amine with the simple TITAN360® test kit provided assurance that the proper treatment level was maintained.

Upon inspection of the boiler, feedwater system, steam lines, and condensate lines, many surfaces have a passivated coloration (black, graphite-like surface) and scale formation was not evident.

Summary

The customer has shown appreciation for the new method of treatment and the results. Operators now test for TITAN360® weekly instead of daily. Condensate traps have not plugged up since beginning the TITAN360® program, and the customer can now spend time upgrading their current kilns instead of repairing corroded piping. On the rare occasion of a low condensate return pH, no iron is present in the water, demonstrating the long term protection that TITAN360® offers to the steam side of a boiler system.