CASE STUDY

Returning Condensate to Steam Boilers Results in Cost Savings and Reduced CO_2 Emissions for Steel Pickling Plant

Background

A steel pickling plant in Ontario, Canada was looking to improve the efficiency of their water treatment systems. Their incumbent water treatment supplier was not providing sufficient support, so they turned to ChemTreat for help.

Solution

ChemTreat's sales and technical team conducted an audit of the customer's steam systems to identify efficiency and cost savings opportunities.

ChemTreat found that none of the condensate was being returned to the boiler; all condensate was going directly into the waste system. After showing the projected savings of condensate return to the customer using ChemTreat's modeling software, the customer's engineering team designed and implemented an appropriately designed condensate return system with consultation from ChemTreat as needed.

Results

The customer installed their engineered condensate return system, which included a condensate receiving tank, return pump, and insulated return lines to capture and return condensate to their boiler feedwater tank. Conductivity probes were installed to monitor condensate quality and prevent acid contamination back to the boiler.

These changes resulted in an 80% condensate return. According to the customer, this led to the following benefits:

- **$18,250 annual water savings**
- **$3,480 annual salt savings (as a result of fewer softener regenerations)**
- **$11,650 annual chemical savings**
- **$16,600 annual natural gas savings**
- **612,000 lb. annual reduction in CO_2 emissions (based on calculations from ChemTreat's reporting tool)**

Results are examples only. They are not guaranteed. Actual results may vary.

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