CASE HISTORY

MIDWEST CHEMICAL COMPANY COOLING WATER PROGRAM

INTRODUCTION

A Midwest Chemical manufacture switched from a major water treatment company to DLWC for economic reasons in December of 2003. The initial savings was $60,000 a year for a three year fixed contract and a total savings of $180,000 on chemical and service. The service was agreed to include weekly visit with detailed reports, trend charts, automated chemistry, and Mass balance.

SERVICES PROVIDED

Corrosion monitoring included corrosion coupons, continuous corrosion monitors, fouling monitors, heat exchanger inspections and temperature profiles on select heat exchangers. Biological controls implemented included a switch to bromine chemistry and Non-oxidizing biocides. Biological monitoring included anaerobic vials for sulfate reducing, slime forming and iron bacteria. Aerobic bacteria monitoring included dip slides and ATP analysis. Legionella bacteria testing conducted quarterly.

POSITIVE RESULTS

Cooling tower basin was full of sludge at the beginning of the program from misapplication of product from the prior vendor. The DLWC Acutrace chemical program gradually removed the accumulation and the sumps are clean. The bottom of the sump is now visible from the surface of the water. The tower packing was stained with rust from the prior program. The packing is now clean on the DLWC program. Corrosion rates on the old program were over 2.5mpy with major under deposit corrosion from Microbiological attack. The DLWC program has produced < 1mpy on corrosion coupons and the corrosion monitors are no longer fouling. Cooling water chemistry improved dramatically. The iron levels of the tower water were consistently over 5ppm. The iron is now maintained at <1ppm and the water is clear. The water in the system has a corrosive tendency due to condensate being used as makeup. The DLWC program was designed to provide protection from corrosion at 60°F and scale inhibition at 180°F.

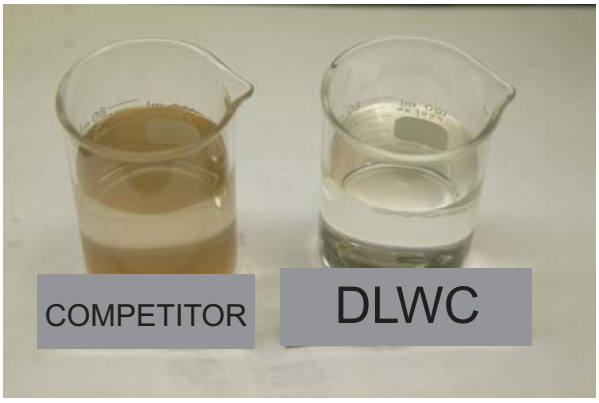
Heat exchanger cleaning was reduced from quarterly on some systems to a rinse out at the annual maintenance shutdown. Overall cleaning was reduced so much that two people working in that area were reassigned to other locations in the plant.

COST IMPROVEMENTS

Chlorine cost was reduced by $2,000 due to the addition of bromine. A proposal for a $100,000 settling pond was cancelled because the DLWC chemical program cleaned up all of the fouling and deposits in the sumps. Estimated cost for to men doing heat exchanger cleaning and repair is estimated at $100,000 a year. The cost of the wasted energy was not possible because that data was not available but based on the steam load and cooling water usage the savings is substantial.

CONCLUSION

The customer has continued with the program and the corporation has brought us into an additional plant in another state.



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