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Spotlight on Acid Elimination Technologies – Process improvements save more than \$25,000 annually

The return on investment time for innovative technologies is often realized in terms of years, not weeks. But, that is exactly what happened to Amplate, Inc. of Charlotte, NC. Amplate has implemented a new closed-loop acid discharge, acid replacement system that returned their investment in just two weeks according Amplate President David French. Amplate provides zinc, electrolytic nickels, electroless nickel, black oxide, decorative chrome and for the passivation of stainless steels. These operations are performed on all basic metal substrates except for aluminum and zinc die Castings.

“We saved a ton of money and significantly reduced sludge shipped to the landfill,” said French. This new system has saved Amplate more than **\$25,000** annually from the use of a new acid bath extender. Seven lines total are using 12, 18 and 24 month old acids for pickling and are performing like new. All Amplate’s reductions in waste generation and water conservation were achieved despite a **four-fold increase in total production**

A coagulant (DTC) had been used periodically in the acid pickle tanks to remove metal contamination without the usual pH adjustment. However, organics would eventually build up and thus require acid bath disposal. Amplate tested PRO-pHx – an acid bath extender and decarboxylating agent – on the spent muriatic acid tank and found that the acid was restored to a nearly new condition. So, instead of going through the ex-

pense of proper disposal and replacement, Amplate was able to reuse this acid, and is still using it more than a year later. Since then, Amplate has been adding PRO-pHx to all of their plating lines, acid strips, pickling tanks and activator baths with highly successful results. They have found that a concentration of 0.5-1.0% PRO-pHx extends the bath life indefinitely. In 1991, Amplate was disposing of more than 11,000 pounds of acids. Last year, their acid disposal was zero. Acid addition is required only to make-up for drag-out, evaporation and neutralization. Amplate reports that the PRO • pHx:

- Extends acid life indefinitely;
- Eliminates new makeup acid costs;
- Eliminates costly disposal methods & costs;
- Requires no down time;
- Eliminates organic buildup;
- Is cost effective; and
- Eliminates issues associated with acid disposal.

Amplate also has been using other innovative approaches to wastewater reuse and sludge reduction. The company has been recognized for Outstanding Achievement in the Small Business Category of the 1994 Governor’s Award for Excellence in Waste Reduction competition. For more information on how Amplate’s closed loop acid elimination model and other technologies can help your company, please contact David French at davidfrench@amplate.com