



Case Study: Reliably Removing Process Oils from the Paint System Wash

The Challenge: As Metcam has grown and production volumes have increased, the amount of process oils going into Metcam's paint system wash bath has also increased. This is a common problem in metal finishing. There are a variety of ways to remove as much oil as possible, including ultra-filtration, skimmers . . . or simply dumping the wash bath once it is contaminated beyond a certain point. These strategies can be expensive to implement and maintain and are sometimes unreliable. These strategies may also result in increased environmental impact . . . including both wastewater and disposal of media.

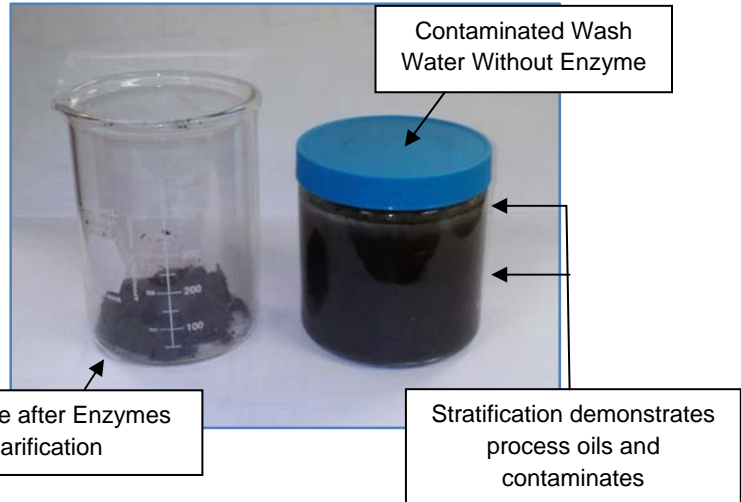
The challenge therefore is to find a technology (or combination of technologies) that produces reliable results and that is in line with Metcam's financial and environmental initiatives, i.e., reducing operating expenses and decreasing environmental impacts.

The Solution: Metcam continuously evaluates new technologies to help with oil removal. This research led to a two prong strategy . . . first, convert the oils into solids and second, remove the solids without using filters. To convert the oils to solids, Metcam adds a specialized "oil-eating" enzyme to the wash bath. The enzyme acts independently and essentially "digests" the oil and any organic contaminants. As the oils and organics are digested, they are converted to a solid residue. To extract the residue, Metcam implemented a stainless steel Lamella flow clarifier. The clarifier was designed and built in-house to integrate efficiently within our wash system based on the system's size, capacity and flow rates.

Lamella Flow Clarifier on Wash System



Contaminated Wash Water and Residue



The Result: By removing the majority of oils and other organic contaminants from its wash system, Metcam has more than doubled the life of its wash bath, simultaneously reducing operational costs and further decreasing the environmental impacts of the wash process.