ZIMMARK TECHNICAL PROCESS MANAGEMENT

Performance Improvement Report

Industry: Railway remanufacturing **Report:** CI-217

Recycling wash water in a Remanufacturing facility has a big impact on costs and OEE

Problem:

Can it be simplified:

This facility remanufacturers rail car wheel bearings. Each bearing must be torn down and washed, introducing approximately 1lb of used grease and sludge into the washer per bearing, quickly contaminating the washers. To address the contamination loading, the washers are recharged frequently resulting high waste and chemical costs while impacting productivity.

Objectives:

. Reduce chemical and waste costs by implementing a closed loop recycling process. Reduce cleanout cycle time. Improve Cleaning Performance. Improve system monitoring for customer audits.

State Prior to CI:

- High Waste Costs. High Chemical Costs. Erratic Wash Performance.
- The facility was struggling to keep up with production levels due to their wash process. Since it was a significant bottle neck in their production, the strategy was to dump the washers multiple times daily to ensure they continued to perform over time. This consumed significant volumes of chemical and generated hundreds of gallons of greasy waste water per day
- Management knew that this practice was extremely wasteful resulting in excessive chemical use, significant generation of waste water and seriously impacted their OEE by all the downtime created by the frequent cleanouts.
- Performance Measureables for the condition of the washers were not in place and chemical concentrations were erratic, resulting in inconsistent wash performance.

State Prior to CI Metrics:

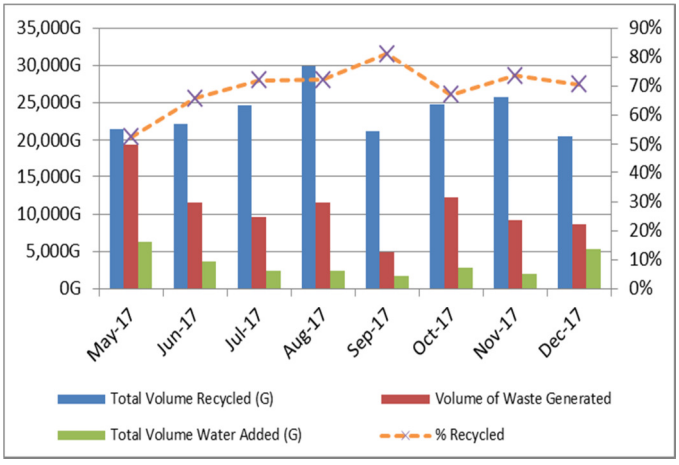
- Over 125 Clean-outs per month
- 1800 Gallons of wash chemistry consumed per month
- Approx 50000 Gallons of wash related waste per month
- OEE Impact: Most change-outs were triggered when parts were no longer cleaning, negatively impact Quality, Availability and Yield

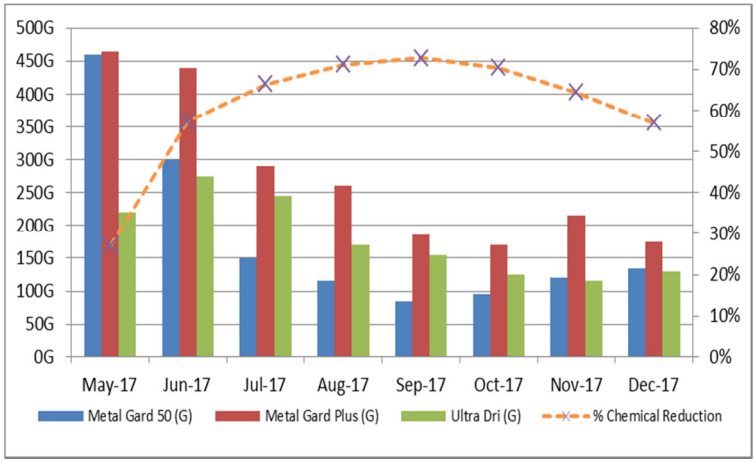
Implemented CI:

- Washer Performance Management Program. Implement a wash water performance management program that included condition based analysis.
- Wash Water Recycling. Install a closed loop wash water recycling system service, significantly reducing waste and chemical costs.
- Wash Re-Charge Chemical System. Minimized impact on down-time as preheated recycled wash water is re-introduced to the process at the correct concentrations. Recharge system improved operator safety. Significant reduction in cleanout time.
- Secondary Waste Concentration. Waste was concentrated to further reduce both the generated volume

Performance Improvement Impact on Facility:

- > 60% reduction in Chemical Consumption per month
- > 70% reduction in Volume of waste generated per month
- > 70% reduction in cost of waste generated per month>60% reduction in water usage for the process
- Metrics Reported Monthly include (bath life, bath contamination, chemical compliances, volume recycled, chemical consumption, waste generation, washer temperature)
- Significantly improved washer performance with repeatable cycle times and cleaning effectiveness





USA Office ▪ 110 East Jackson St. ▪ PO Box 773 ▪ West Unity ▪ OH ▪ USA ▪ 43570
Canada Office ▪ 4380 South Service Rd. ▪ Burlington ▪ ON ▪ Canada ▪ L7L 5Y6
Phone: 888.632.5410 ▪ Fax: 888.632.5171 ▪ www.zimmark.com