



Microscopic Analysis Report

Customer Name: ROBERT WILSON
 Reservoir Description: 2ZR-FXE ENG FILTER

Sample Date: 02/21/17
 Lab Number: 655005

Discussion of Results

Ferrogram Interpretation: There were moderate amounts of ferrous rubbing wear particles and abrasive/dust/dirt particles present on the slide. Also, there were a few ferrous/nonferrous white metal rolling wear platelet particles, ferrous/nonferrous white metal cutting wear particles, and black oxide particles observed on the slide. There were a few nonferrous white metal rubbing wear particles found on the slide. The presence of rolling wear platelet particles suggests possible surface fatigue and/or rolling contact failure due to metal-to-metal sliding and/or abrasive contamination. The presence of cutting wear particles suggests possible misalignment and/or abrasive contamination. The presence of black oxide particles suggests possible overheating and/or lubricant starvation. The morphology of abrasive/dust/dirt particles suggests possible contamination of the sample and/or reservoir from an external source.

Microscopic Analysis

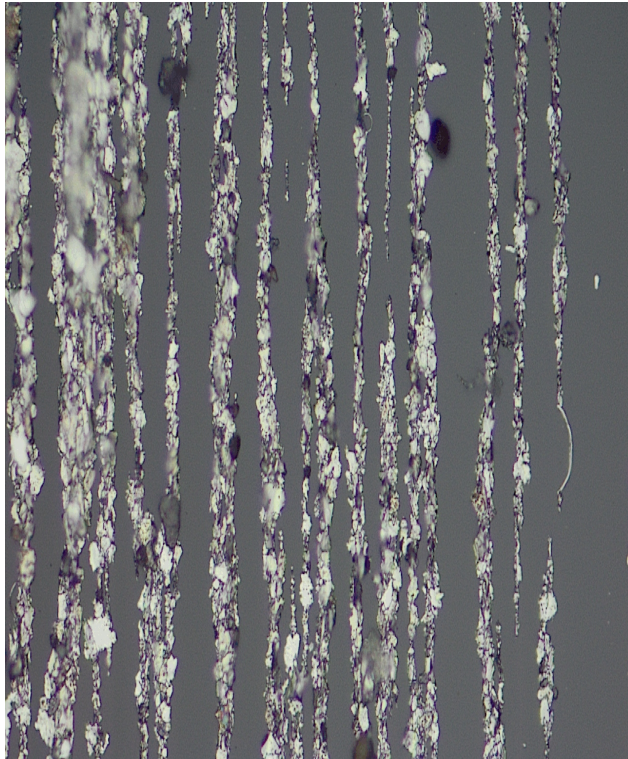


Figure 2: Ferrous Rolling Wear Platelet Particles, Ferrous Cutting Wear Particles, and Ferrous Rubbing Wear Particles at the Head of the Slide (Magnification 500X).

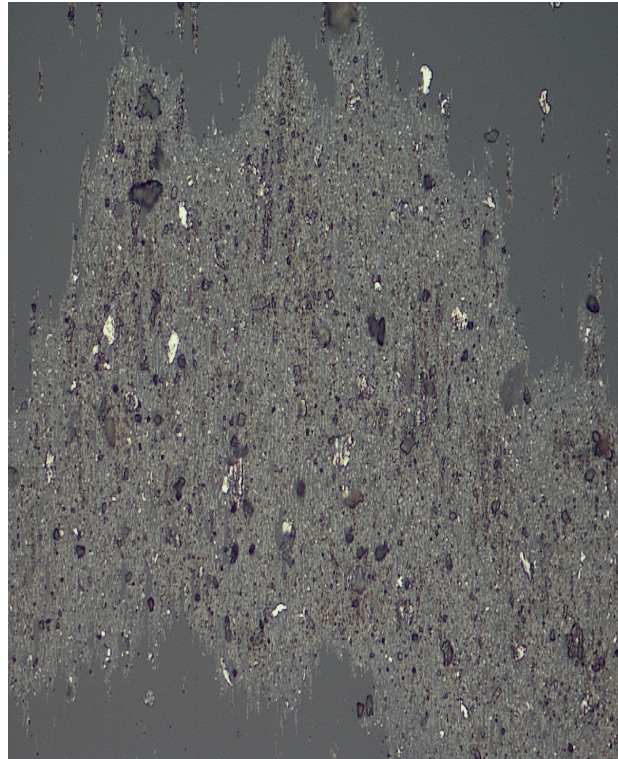


Figure 1: Nonferrous White Metal Cutting Wear Particles, Nonferrous White Metal Rubbing Wear Particles, and Abrasive/Dust/Dirt Particles at the End of the Slide (Magnification 500X).

