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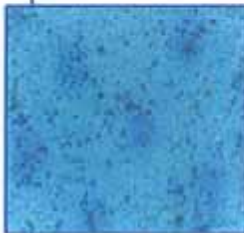
Machine ID: Unknown
Component Name: Engine
Manufacturer:
Model:
Site: Hunter Valley Operations
Maintenance Division: Unknown

SampleID: OIL_000077
Date Sampled: 19 November 2002
Machine Hrs:
Oil Hrs:
Filtered Oil Hrs:
Filter Hrs:



Penetration \ Contamination @ 100%.

Filter Condition



Overview showing soot and normal dirt/dust particles.

Contaminant @ 100x



Copper alloy debris

22um Minor non ferrous wear particle. Copper-alloy, depending on component metallurgy could indicate bearing race, thrust washer / spacer or gear wear.

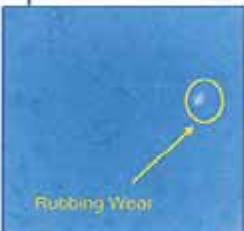
Non Ferrous @ 200x



Tempered particle view obstructed by fine soot particles.

14um tempered lead particle. Tempering indicates some overheating, possibly due to load. The blueish-orange tempering is indicative of temperatures reaching up to 290c.

Tempered @ 500x



Rubbing Wear

Normal Rubbing Wear: Normal-rubbing wear particles are generated as the result of normal sliding wear in a machine and result from exfoliation of parts of the shear mixed layer. Rubbing wear particles consist of flat platelets, generally 5 microns or smaller, although they may range up to 15 microns depending on equipment application.

Rubbing @ 500x

Comments

A variety of wear types and dust contaminants were observed. It appears that the filter is effectively trapping particulates from 2um and above.