



Caterpillar 785 Haul Truck Final Drive : Gonyella - Riverside, Queensland

Gonyella—Riverside Qld Cat 785 Finaldrive

Gonyella recently commissioned FTA’s FM1040T Finaldrive Filtration Unit into their maintenance program, the aim of this unit is to reduce particulate contamination in their finaldrives.

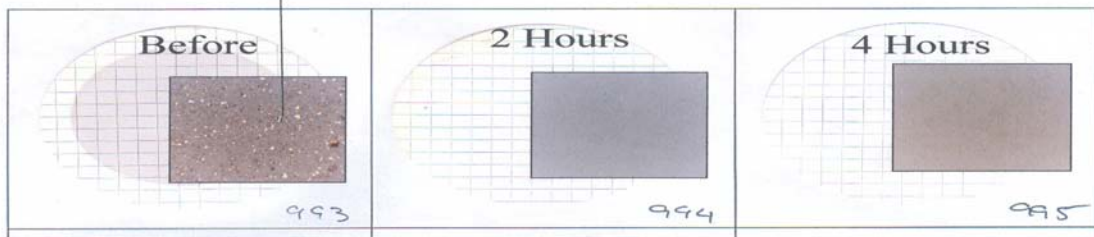
The Cat 785 picture below was used in the commissioning and also the oil report on the next page indicates the oil at ISO 22/18 coming out of the finaldrive as it was drained into the FM 1040T’s tank, after four hours of filtering the oil was returned into the finaldrive and is now at a ISO 15/11 a 89% reduction in particulate contamination.

Silicon was reduced by 40%, Sodium 38%,Iron 33% and Copper 30%.

The Microscopic Patches below tell their own story as there is a dramatic difference in the before and four hours after filtration. This is a true indication of the efficiency of this style of filtration unit over a kidney loop system as this is the oil being returned into the finaldrive.

Copper alloy, some ferrous fatigue & laminar wear

Microscopic Patch 0.8um x 47mm (25ml)



Insert shows contamination @ 100x Magnification



Site: Filter Technology Australia Pty Ltd
 Attention To: PHIL
 Machine: GRCM Goonyella / Riverside
 Sample Location: RD 24- CAT 785 Final Drive
 Oil Type: BP TO450

4 Walter Street \ PO Box 490
 Singleton NSW 2330
 Phone: (02) 6571-1444
 Facsimile: (02) 6571-4433
 OKAY

Oil+Test

Sample Date: 17-Mar-04
 Analysis Report No.: 208,993
 Service Meter Reading: 208,994
 Electric SMR: 208,994
 Oil Hrs: 0
 Oil Changed?: 2

Wear Metals

Limit	17-Mar-04	18-Mar-04	19-Mar-04
	ppm	ppm	ppm
lead	1	0	1
iron	6	3	4
aluminium	1	1	2
copper	11	7	8
chromium	0	0	0
tin	0	0	0
nickel	0	0	0
silver	0	0	0
titanium	0	0	0

Contaminants

Limit	17-Mar-04	18-Mar-04	19-Mar-04
	ppm	ppm	ppm
silicon	20	11	12
sodium	22	14	14
vanadium	0	0	1

Oil Additives

Limit	17-Mar-04	18-Mar-04	19-Mar-04
	ppm	ppm	ppm
magnesium	13	12	13
zinc	1389	1455	1400
molybdenum	0.2	0	0.2
calcium	3072	3003	3001
phosphorous	1093	1078	1105
boron	0.9	0.6	0.8
barium	0	0	0

Physical Tests

TBN	0	0	0
TAN	0.00	0.00	0.00
fuel dilution %	0	0	0
water %	<0.1	<0.1	<0.1
viscosity index	101	101	101
visc @ 100oC - Cst	17.82	18.06	17.98
visc @ 40oC - Cst	192	196	194

FTIR Analysis

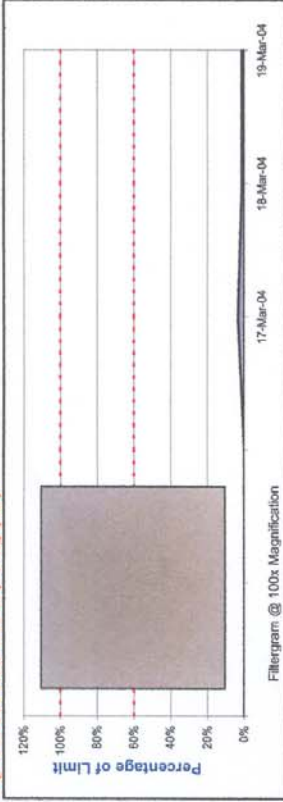
soot - abs			
glycol%			
water ppm			
oxidation - abs			
nitration - abs			
sulphation - abs			

Particle Analysis

particle count in 1ml	45794	6586	6397
ISO-4406 6um \ 14um	22/18	16/11	15/11
PQ90 Fe - mg \ ltr	12	5	5

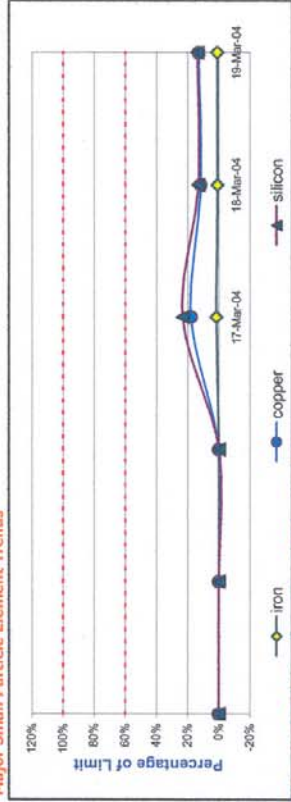
NOTE: This machine \ oil condition report should be used in conjunction with normal maintenance practices. All care will be taken in processing and analysing samples but no express or implied guarantee is offered in regard to the continuing operation or condit

PQ - Ferrous Wear Debris (Fe mg \ ltr)

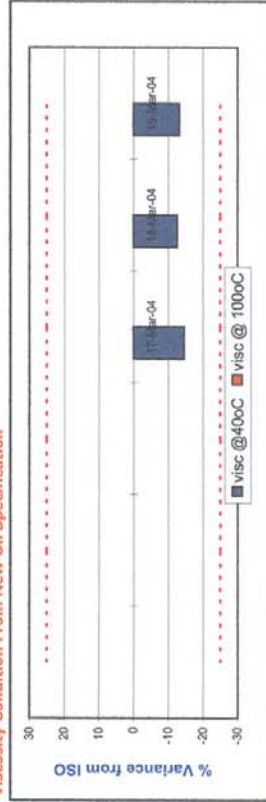


Fillergram @ 100x Magnification

Major Small Particle Element Trends



Viscosity Condition From New Oil Specification



Comments & Recommendation

Solid particle contamination has improved. Results within acceptable limits. Continue with regular maintenance and monitoring.