Caterpillar 793 Haul Truck Final Drives : Leightons - Queensland

Leighton's Moura

Leighton's have purchased a FM 504 and a FM 1040 T filter buggies to maintain the contamination within their Finaldrives and Hydraulic systems on the CAT 793 haul truck fleet.
Additionally they are fitting the Terex diggers with FTA filtration systems on Hydraulics, PTO, Swing Boxes and Engine Oils.

The FM 504 report on Hydraulics' below indicates the oil ISO has improved from 19/15 to 14/11 a 96% reduction in contaminates.

OKAY

Oil Test

Filter Technology - Leightons Moura
FTA / LEIGHTONS
793-2 CAT 793-C
Hydraulic Oil
ISO 68

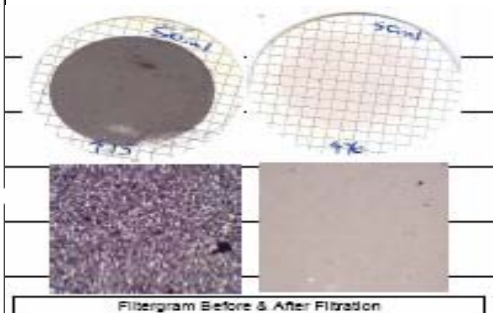
	18-Aug-05	19-Aug-05	20-Aug-06
	250,481	250,482	250,483
	0hrs	0hrs	0hrs
	-	-	-
	-	-	-
lead	No	No	No
iron	ppm	ppm	ppm
aluminium	1	1	1
copper	6	6	4
chromium	1	1	1
tin	6	3	8
nickel	0	0	0
silver	0	0	0
titanium	2	2	3
Contaminants	0	0	0
silicon	0	0	0
sodium	ppm	ppm	ppm
vanadium	23	23	27
Oil Additives	2	2	1
magnesium	0	0	0
zinc	ppm	ppm	ppm
molybdenum	159	43	182
calcium	1439	1435	1347
phosphorous	0.1	0	0
boron	2492	2836	2211
barium	1247	1211	1216
Physical Tests	6	2	7
TBN	1	0	1
TAN			
fuel dilution %	0	0	0
water %	0.00	0.00	0.00
viscosity index	0	0	0
visc @ 100oC - Cst	< 0.1	< 0.1	< 0.1
visc @ 40oC - Cst	104	0	103
FTIR Analysis	8.01	-	8.36
soot - abs	69	68	62
glycol%	0	0	0
water ppm	0	0	0
oxidation - abs	0	0	0
nitration - abs	0	0	0
sulphation - abs	0	0	0
Particle Analysis	0	0	0
particle count in 1ml	0	0	0
ISO-4406 6um \ 14um	23380	5080	832
PQ90 Fe - mg \ ltr	19\15	17\13	14\11
	4	1	0

Finaldrive Oil

Finaldrive oil life is at 6,000 hours and still reporting O.K, they are trying to achieve 10,000 hour drains. The report to the left is of the finaldrive oil returning to the 793 after filtering, the ISO particle count has been reduced from 22/17 to 17/15 a 78% reduction, Iron has been reduced from 35 ppm to 14 ppm a 60% improvement.

The filter patches below tell the real story of what contaminates are being removed from the finaldrive oil.

Leighton's are now looking at the results gained here to implement to other sites in Queensland.



Fibergram Before & After Filtration

Oil Test

Filter Technology - Leightons Moura
FTA / LEIGHTONS
793-1 CAT 793-C
Final Drive oil
CALTEX TORQUE FLUID 464

18-Aug-05	19-Aug-05
250,474	250,477
0hrs	0hrs
-	-
-	-
No	No
ppm	ppm
1	1
35	14
0	0
5	4
1	0
0	0
0	0
0	0
0	0
ppm	ppm
5	5
6	4
0	0
ppm	ppm
3	4
25	25
0	0
259	216
274	261
66	60
5	3
0	0
0.00	0.00
0	0
< 0.1	< 0.1
95	97
23.60	24.20
314	318
0	0
0	0
0	0
0	0
0	0
0	0
56451	12520
22\17	17\15
90	10