



CLEAN OIL
BRIGHT IDEAS

Engine Lube Oil Volvo FMX 4400 Mining Trucks

CJC™ Application Study

Application Study
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in cooperation with:

Kinross,
Chirano Goldmine, Ghana



Installation year:
2015

CUSTOMER

Kinross, Chirano Goldmine, Ghana.

SYSTEM

System: 40 off Volvo FMX 440 mining trucks
Oil type: Engine lube oil

PROBLEM

Dirty environment and rough operating conditions demanding engine lube oil changes every 500 hours, because of poor viscosity and high ISO Codes. High wear rates on engines. As trucks operate 6,000 hours per year, this gives too many service intervals and engine overhauls.

SOLUTION

CJC™ Heavy Duty HD HDU 15/12 oil filters with CJC™ Filter Inserts BG 15/12 were installed on board kidney loop filter.

FINANCIAL BENEFITS

Annual savings, with full implementation on the fleet of 40 Volvo FMX 440 mining trucks, equal 681,800 USD. (594,000 in engine running costs; 27,000 in labour costs and 60,800 in oil costs).

ENVIRONMENTAL BENEFITS

Reduction in annual oil consumption with 30,400 litres engine oil, from 36,480 litres to 6,080 litres.

TEST

The test was conducted on one unit and proved that oil change intervals could be extended from every 500 hours to well beyond 1,500 hours; and that engine wear could be significantly reduced by keeping oil clean during operation with kidney loop filtration.

RESULT

With full implementation, elimination of 320 service intervals and 9 major overhauls per year. As Kinross operates 40 Volvo FMX 440 trucks on site – the target is that each truck operates 6,000 hours per year. Extending the service intervals from 500 hours to 1,500 hours means Kinross can reduce annual service intervals from 480 to 160 intervals per year. This gives significantly less downtime. Moreover, a Volvo FMX 440 needs major engine overhaul every 10,000 hours. For a fleet of 40 trucks, this averages 24 overhauls per year. Keeping the oil clean during operation, enables Kinross to extend engine overhaul to 18,000 hours, which means only 13 overhauls per year - each at a cost of 66,000 USD per engine and 3,000 USD in labour.

TOTAL POTENTIAL SAVINGS 681,800 USD / year on:

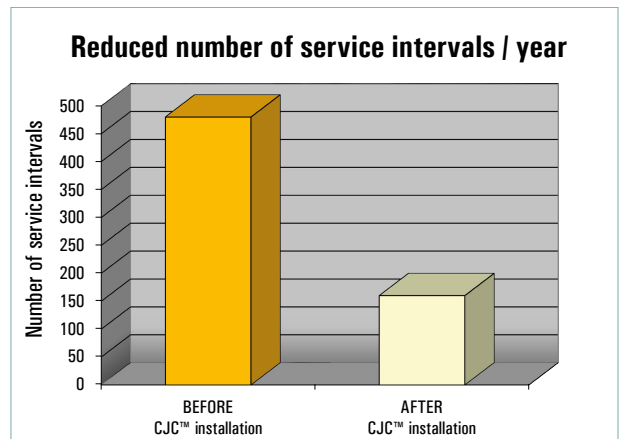
- oil savings
- extended oil change intervals
- increased service & overhaul intervals
- reduced wear on engines



Volvo Mining truck
with CJC™ Oil Filter installed,
operating at Chirano Gold Mine, Ghana
- an underground and open pit gold mine



CJC™ Heavy Duty
HD HDU 15/12 oil filter



SAVINGS

Type of Costs 40 mining trucks	BEFORE	AFTER	TOTAL savings / year
Oil savings	36,480 ltr	6,080 ltr	30,400 ltr saved
Service intervals	pr. 500 hour = 480 service. int.	pr. 1,500 hour = 160 service int.	320 service intervals
Overhauls	pr. 10,000 hour = 24 overhauls	pr. 18,000 hours 13 overhauls	11 overhauls
Annual savings			
- engine running costs		594,000 USD	681,800 USD
- labour costs		27,000 USD	
- oil costs		60,800 USD	

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Mining
Dump Trucks & Excavators
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