

Mobil Delvac 1™ ESP 5W-40 oil delivers outstanding cleanliness in Cummins marine main engine



Energy lives here™

Summary

A team of ExxonMobil experts conducted a full engine inspection of a Cummins KTA38 marine diesel engine that used Mobil Delvac 1™ ESP 5W-40 fully synthetic diesel engine oil.

After nearly a decade of operation and 21,782 running hours, the inspection showed:

- 1 Excellent protection and cleanliness
- 2 Minimal wear throughout engine components including the piston skirts, wrist pins, crankshaft, camshafts and gears

“After nine years of operation, one would expect to see deposits, scuffing and component wear. However, during this engine overhaul, the cleanliness observed was impressive, and the wear levels were very low.”

— J.R. Hand, US Marine Field Engineer, ExxonMobil

Testing method

ExxonMobil engineers evaluated the cleanliness of the Cummins KTA38 engine using the Coordinating Research Council (CRC) method as per Deposit Rating Manual 20. This rates component sludge contamination on a scale from one to 10, with 10 indicating a complete absence of deposit buildup.



Results

Mobil Delvac 1 ESP 5W-40 engine oil delivered exceptional results across a range of testing categories, including:

- Engine component cleanliness rating: 9.8
- Sump rating: 9.7
- Front of the engine block rating: 9.8
- Valve covers rating: 9.9

Mobil Delvac 1™ ESP 5W-40 oil delivers outstanding cleanliness in Cummins marine main engine

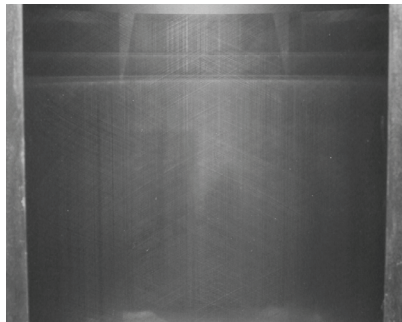
Inside the engine

The Cummins engine components exhibited outstanding cleanliness, as shown in the following images.



Pistons:

No evidence of stuck rings or clogging of the oil ring; all rings had normal face wear



Cylinder liners:

Demonstrated minimal wear



Oil gear pump:

Minimal to no wear present



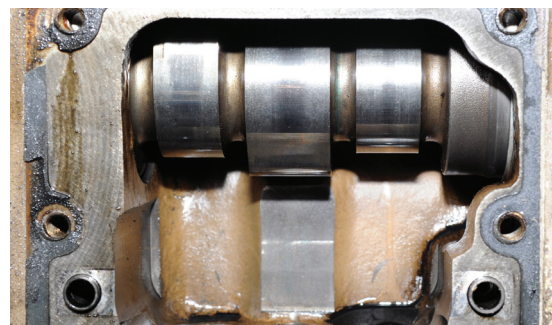
Valve covers and rocker arms:

Indicated exceptional cleanliness



Engine oil pan:

Very little to no sludge buildup



Camshaft in block:

Showed exceptional cleanliness and minimal wear

Conclusion

- The engine inspection revealed minimal wear, high cleanliness and lack of sludge buildup in the engine.
- Mobil Delvac 1™ ESP 5W-40 oil provided the Cummins KTA38 main engine with outstanding protection and cleanliness for almost a decade while extending oil drain intervals to 3,000 hours — over 10 times longer* than the engine builder's recommendation.
- Oil analysis enabled the close monitoring of the health of the lubricant and the engine throughout its operation.

*These results were achieved while maintaining OEM recommended filter change intervals.

Based on the experience of a single customer. Actual results can vary depending upon the type of equipment used and its maintenance, operating conditions and environment, and any prior lubricant used.

Compared with conventional mineral oils, Mobil Delvac 1 synthetic engine oils offer a number of performance advantages including advanced wear protection, excellent low temperature performance and outstanding thermal and oxidation stability, which can help towards long engine life. Always consult your OEM regarding recommendations for your equipment.

© 2017 ExxonMobil. All trademarks used herein are trademarks or registered trademarks of Exxon Mobil Corporation or one of its subsidiaries.

exxonmobil.com/marine