

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH50M 1216-109503 - Diesel Engine

Sample No: LHMC162820

Oil Type: DIESEL ENGINE OIL SAE 5W40



AHLSTROM-MUNKSJO NA SPECIALTY
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 KAUKAUNA, WI
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SAMPLE INFORMATION

Sample Number	LHMC162820	LHMC162811	LHMC163387	LHMC163322
Sample Date	06 Jul 2023	23 Mar 2023	15 Mar 2022	28 Sep 2021
Machine Hours	5973	5400	4809	4072
Oil Hours	574	591	737	542
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



OIL CONDITION

Visc @ 100°C	cSt	13.1	13.2	13.1	13.2
Base Number (BN)	mg KOH/g	4.3	4.3	4.2	---
Oxidation (PA)	%	193	189	218	189



CONTAMINATION

Soot %	%	0.1	0.1	0.2	0.3
Nitration (PA)	%	94	94	103	92
Sulfation (PA)	%	109	109	120	110
Glycol	%	NEG	0.0	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	14	12	13	13
Sodium	ppm	<1	0	0	0
Potassium	ppm	3	2	2	2



WEAR METALS

Iron	ppm	4	0	7	8
Copper	ppm	2	2	2	3
Lead	ppm	1	<1	2	1
Tin	ppm	<1	0	<1	<1
Aluminum	ppm	2	1	3	5
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	47	48	47	49
Nickel	ppm	<1	0	0	0
Titanium	ppm	<1	<1	0	0
Silver	ppm	0	0	<1	<1
Manganese	ppm	<1	0	<1	<1
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	1064	1018	1050	1062
Magnesium	ppm	951	832	928	890
Zinc	ppm	1332	1194	1296	1205
Phosphorus	ppm	1066	1014	1046	1051
Barium	ppm	1	0	0	0
Boron	ppm	80	87	85	65

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: AHLKAU
 Unique No: 10562037
 Signed: Don Baldrige
 Report Date: 19 Jul 2023



GRAPHS

