

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH50 1216-116574 - Diesel Engine

Sample No: LH0171171

Oil Type: MOBIL 1 5W30



SAMPLE INFORMATION

Sample Number	LH0171171	LH0171113	LH0171104	LH0171100
Sample Date	29 Aug 2023	27 Apr 2023	27 Jan 2023	29 Aug 2022
Machine Hours	17910	16726	14930	2500
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	N/A
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

BOISE WHITE PAPER

3RD AVE AND HWY 11, 400 2ND ST
INTERNATIONAL FALLS, MN
US 56649
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OIL CONDITION

Visc @ 100°C	cSt	13.2	14.1	13.7	11.9
Base Number (BN)	mg KOH/g	5.1	4.0	5.4	---
Oxidation (PA)	%	91	112	120	119



CONTAMINATION

Soot %	%	0.2	0.2	0.2	0.2
Nitration (PA)	%	93	110	122	112
Sulfation (PA)	%	70	69	68	70
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	9	8	6	7
Sodium	ppm	3	1	1	2
Potassium	ppm	2	6	2	2



WEAR METALS

Iron	ppm	8	13	15	10
Copper	ppm	2	2	2	36
Lead	ppm	0	<1	1	2
Tin	ppm	<1	<1	<1	0
Aluminum	ppm	2	0	6	4
Chromium	ppm	<1	<1	1	<1
Molybdenum	ppm	3	9	7	4
Nickel	ppm	0	0	0	<1
Titanium	ppm	84	66	0	<1
Silver	ppm	0	0	<1	<1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	0	0



ADDITIVES

Calcium	ppm	1408	1305	1224	1157
Magnesium	ppm	821	744	897	812
Zinc	ppm	1237	1117	944	809
Phosphorus	ppm	995	899	736	664
Barium	ppm	0	0	0	6
Boron	ppm	35	42	32	17

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 acceptable for the time in service.

Depot: BOIINT
Unique No: 10633518
Signed: Don Baldrige
Report Date: 08 Sep 2023



GRAPHS

