

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH50 1216-131051 - Diesel Engine

Sample No: LH0213092

Oil Type: DIESEL ENGINE OIL SAE 5W40



SAMPLE INFORMATION

Sample Number	LH0213092	LH0213022	LH0213106	LH0213008
Sample Date	30 Aug 2023	25 Apr 2023	24 Jan 2023	03 Dec 2021
Machine Hours	9736	0	7995	1664
Oil Hours	0	0	0	0
Oil Changed	Changed	Not Changd	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	ABNORMAL

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	13.5	13.5	13.5	12.2
Base Number (BN)	mg KOH/g	5.3	5.3	4.1	3.2
Oxidation (PA)	%	92	79	129	209



CONTAMINATION

Soot %	%	0.1	0.1	0.2	0.1
Nitration (PA)	%	95	80	119	116
Sulfation (PA)	%	65	58	70	107
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	6	8	5	8
Sodium	ppm	2	2	1	<1
Potassium	ppm	2	3	0	3



WEAR METALS

Iron	ppm	10	6	14	19
Copper	ppm	6	2	4	174
Lead	ppm	0	0	<1	6
Tin	ppm	<1	0	1	2
Aluminum	ppm	2	2	6	2
Chromium	ppm	<1	<1	1	1
Molybdenum	ppm	18	6	10	35
Nickel	ppm	0	<1	0	0
Titanium	ppm	50	83	0	2
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	1
Vanadium	ppm	<1	<1	0	<1



ADDITIVES

Calcium	ppm	1321	1336	1188	1339
Magnesium	ppm	860	754	866	918
Zinc	ppm	1214	1229	947	903
Phosphorus	ppm	979	986	730	738
Barium	ppm	<1	0	<1	24
Boron	ppm	31	72	34	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: BOIINT
Unique No: 10633517
Signed: Wes Davis
Report Date: 06 Sep 2023



GRAPHS

