

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH110 1227-155752 - Diesel Engine

Sample No: LH0280580
 Oil Type: DIESEL ENGINE OIL SAE 15W40



KINDER MORGAN
 4301 IVERSON
 TRINITY, AL
 US 35601
 Contact: CHIP OAKES

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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.



SAMPLE INFORMATION

Sample Number	LH0280580	LH0280569	LH0280561	LH0280558
Sample Date	20 Feb 2024	30 Jan 2024	11 Jan 2024	28 Dec 2023
Machine Hours	1022	863	507	277
Oil Hours	0	0	0	0
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	NORMAL	NORMAL	ATTENTION	ATTENTION



OIL CONDITION

Visc @ 100°C	cSt	12.4	12.5	12.1	12.0
Base Number (BN)	mg KOH/g	6.6	7.2	5.6	6.2
Oxidation (PA)	%	80	75	180	197



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	69	62	88	87
Sulfation (PA)	%	62	61	101	107
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	1.2	1.3
Silicon	ppm	9	9	9	10
Sodium	ppm	2	0	3	3
Potassium	ppm	2	2	3	2



WEAR METALS

Iron	ppm	6	4	5	4
Copper	ppm	7	6	29	12
Lead	ppm	<1	0	2	2
Tin	ppm	<1	0	1	1
Aluminum	ppm	3	2	2	2
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	81	83	48	43
Nickel	ppm	<1	0	<1	<1
Titanium	ppm	<1	0	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	<1	0	<1	<1
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	1150	1235	1196	1200
Magnesium	ppm	436	478	771	818
Zinc	ppm	1063	1131	853	801
Phosphorus	ppm	858	860	723	691
Barium	ppm	38	9	25	28
Boron	ppm	309	360	153	125

Depot: KINTRI
 Unique No: 10898141
 Signed: Wes Davis
 Report Date: 27 Feb 2024



GRAPHS

