ł 3 I I R R **CONSTRUCTION EQUIPMENT**

LIEBHERR LH50M 1203-75766 - Diesel Engine

Sample No: LH0243355

Oil Type: MOBIL DELVAC 1300 SUPER15W40

SAMPLE INFORMATION

- SAMP	LE INTOK	MAIIVN			
Sample Number		LH0243355	LHMC96181	LHMC96177	LHMC79151
Sample Date		27 Sep 2023	27 Dec 2018	30 Aug 2018	23 Jul 2018
Machine Hours		20040	8936	7970	7646
Oil Hours		150	300	300	329
Oil Changed		N/A	Changed	Changed	Changed
Sample Status		ABNORMAL	NORMAL	NORMAL	NORMAL
	NDITION				
Visc @ 100°C	cSt	<mark>)</mark> 11.5	13.38	13.25	0 13.48
Base Number (BN)	mg KOH/g	0 10.6			
Oxidation (PA)	%	76	85	84	85
	AMINATI	<u> </u>			
Soot %	%	•	÷	÷	Ŭ
Nitration (PA)	%	-	-	\smile	0
Sulfation (PA)	%			Ŭ	Ŭ
Glycol	%				
Fuel	%	• • •			
Silicon	ppm	U U	0	-	-
Sodium	ppm		•	U	•
Potassium	ppm	0	0	02	0
	R METALS	N/A Changed Changed Changed Changed NoRMAL ABNORMAL NORMAL NORMAL NORMAL NORMAL NORMAL DITION			
Iron	ppm	0 14	0 10	07	8
Common	10.10.100	\frown			

Iron	ppm	0 14	0 10	07	8	
Copper	ppm	0 2	01	0 1	0 1	
Lead	ppm	<mark></mark> <1	0	◯ <1	◯ <1	
Tin	ppm	<mark></mark> <1	0	0	0	
Aluminum	ppm	<u> </u>	0 4	0 4	3	
Chromium	ppm	01	○ <1	◯ <1	◯ <1	
Molybdenum	ppm	0 39	0 44	0 42	36	
Nickel	ppm	0 (○ <1	◯ <1	◯ <1	
Titanium	ppm	0	0	<1	<1	
Silver	ppm	0 (0	<1	0	
Manganese	ppm	○ <1	◯ <1	◯ <1	◯ <1	
Vanadium	mqq	<1	0	0	0	

0	

	TIVES				
Calcium	ppm	0 1523	0 1781	0 1711	0 1556
Magnesium	ppm	474	○ 521	○ 509	◯ 480
Zinc	ppm	837	890	880	0 791
Phosphorus	ppm	694	681	○ 714	657
Barium	ppm	0 🔘	0	0	0
Boron	ppm	0 47	28	22	0 18







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Diagnosis

We advise that you check the fuel injection system. Resample at the next service interval to monitor. The aluminum level is abnormal. All other component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.





GRAPHS

Ferrous Alloys 35 iron chromium 30 - nickel 25 20 ppm 15 10 5 0 潮 Feb15/16 Apr10/17 Aug11/17 Dec1/17 Aug1/16 Dec12/16 Mar26/18 Aug30/18 Non-ferrous Metals 110 copper 100 nn lead 90 80 70 60 bpm 50 40 30 20 10 0 Apr10/17 Aug30/18 Aug11/17 Dec1/17 Feb15/16 Aug1/16 Dec12/16 Mar26/18 O Viscosity @ 100°C 18 17 Abnormal 16 9.0 15 8.0 Base Number (mg KOH/g) Base 7.0 () 100-01 13 12 6.0 Abnorma 5.0 4.0 11 10 9 8 Feb15/16-Aug1/16. Apr10/17. Aug11/17 Dec1/17 Dec12/16 Mar26/18 Aug30/18

Base Number 11.0 10.0 Base 3.0 2.0 1.0 0.0-Feb15/16 -Aug1/16 Aug11/17 Dec1/17 Apr10/17 Mar26/18 Dec12/16 Aug30/18

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Contact/Location: ROSS RICHARD - PACTOM