LIEBHERR

CONSTRUCTION EQUIPMENT

LIEBHERR R924 038847-1318 - Diesel Engine

Sample No: LH0242054

Oil Type: PETRO CANADA 10W40



OILCO	NDITION				
Visc @ 100°C	cSt	12.3	O 12.9	O 13.6	12.9
Oxidation (PA)	%	65	53	61	70

CONTAMINATION					
Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.3	0.1	0.2	0.4
Nitration (PA)	%	75	65	63	78
Sulfation (PA)	%	56	53	56	59
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	11	9	9	9
Sodium	ppm	5	6	O 2	3
Potassium	ppm	6	O 14	O <1	O 0

(O) WEAT					
WEAR METALS					
Iron	ppm	25	O 28	O 12	O 15
Copper	ppm	<u> </u>	19	O 2	3
Lead	ppm	7	4	1	4
Tin	ppm	2	O 2	O <1	O <1
Aluminum	ppm	5	5	1 7	4
Chromium	ppm	2	O 2	O <1	O <1
Molybdenum	ppm	57	48	59	6 1
Nickel	ppm	0	O 0	O <1	O <1
Titanium	ppm	0	<1	<1	0
Silver	ppm	○ <1	O <1	0	0
Manganese	ppm	0 <1	O 1	O <1	O <1
Vanadium	ppm	0	0	0	0

ADDITIVES					
Calcium	ppm	1389	O 1675	O 1114	O 1133
Magnesium	ppm	916	O 776	957	1006
Zinc	ppm	1235	O 1162	O 1216	O 1257
Phosphorus	ppm	992	O 1041	O 1079	1096
Barium	ppm	11	O 24	O	O
Boron	ppm	5	O 25	O 1	O <1



ECOWASTE INDUSTRIES LTD. 15111 WILLIAMS ROAD RICHMOND, BC CA V6W 1G9 Contact: Service Manager

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F:

Diagnosis

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Copper ppm levels are abnormal. A sharp increase in the copper level is noted. Bearing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Depot:ECORICUnique No:5683723Signed:Kevin MarsonReport Date:24 Nov 2023

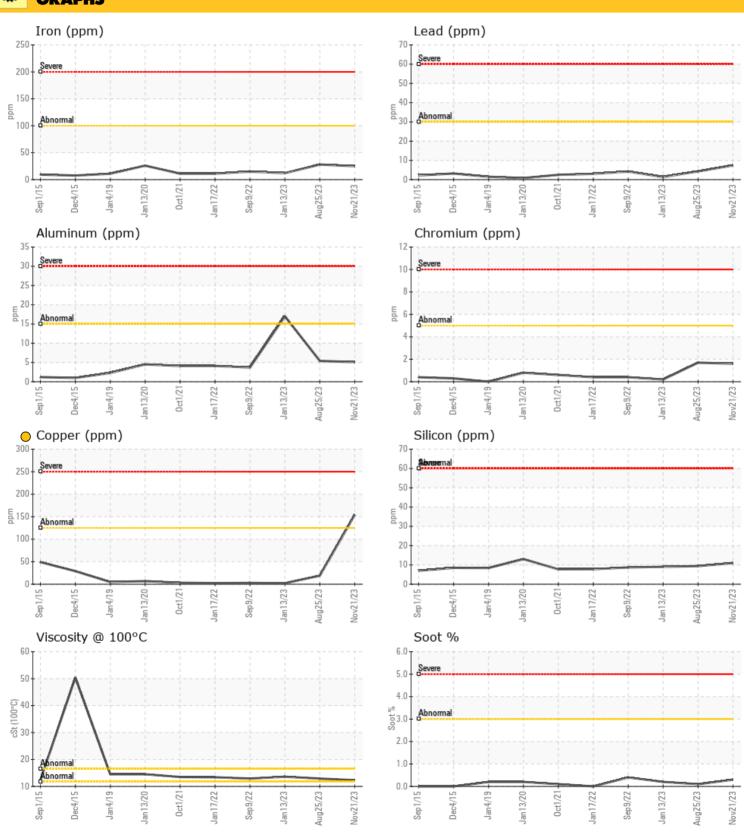
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GRAPHS



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Submitted By: Isabelle Langlois