



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH30M 1253-118648
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 5W-30 LOW ASH (32 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0272219	LH0244507	LH0207310
Sample Date		Client Info		17 Jun 2024	07 Mar 2023	09 Nov 2021
Machine Age	hrs	Client Info		1690	1690	952
Oil Age	hrs	Client Info		952	738	952
Filter Age	hrs	Client Info		0	738	952
Oil Changed		Client Info		Changed	Filtered	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	11	13	12
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>8	3	1	2
Lead	ppm	ASTM D5185m	>10	<1	<1	4
Copper	ppm	ASTM D5185m	>74	12	44	▲ 340
Tin	ppm	ASTM D5185m	>4	<1	1	2
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

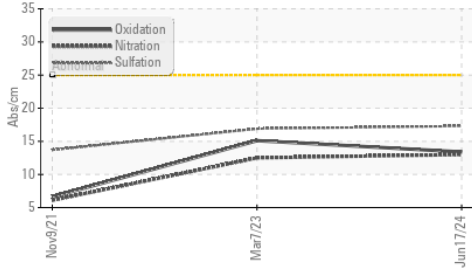
Silicon	ppm	ASTM D5185m	>15	10	11	11
Potassium	ppm	ASTM D5185m	>20	4	4	5
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	13.0	12.5	6.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	16.9	13.7
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

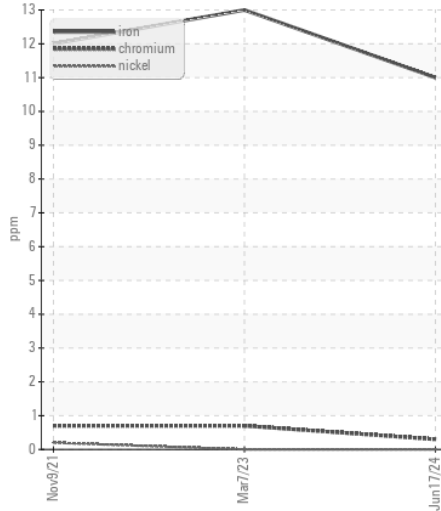
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	<1	3
Boron	ppm	ASTM D5185m	2	215	247	78
Barium	ppm	ASTM D5185m	0	<1	5	21
Molybdenum	ppm	ASTM D5185m	<1	<1	9	59
Manganese	ppm	ASTM D5185m	<1	1	<1	2
Magnesium	ppm	ASTM D5185m	12	40	115	824
Calcium	ppm	ASTM D5185m	2224	4413	4111	1393
Phosphorus	ppm	ASTM D5185m	635	1044	998	631
Zinc	ppm	ASTM D5185m	718	1231	1174	848
Sulfur	ppm	ASTM D5185m	1694	3289	2983	1907
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.4	15.1	6.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.76	13.7	11.1	---
Visc @ 100°C	cSt	ASTM D445	12.0	11.0	10.9	11.6

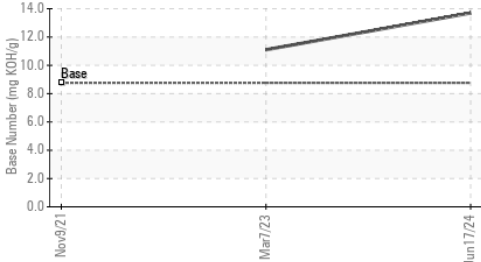
FT-IR (Direct Trend)



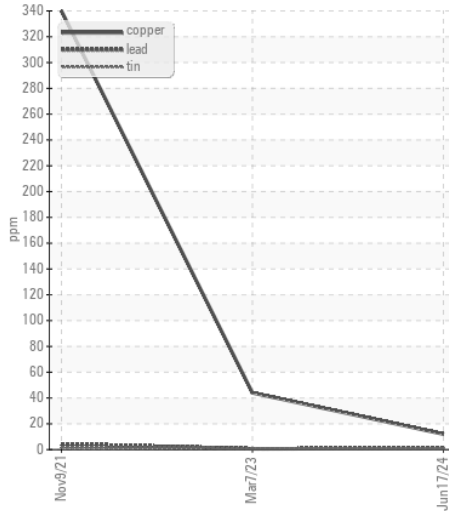
Ferrous Alloys



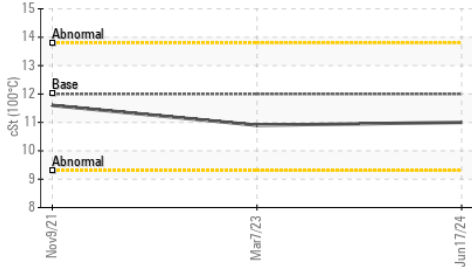
Base Number



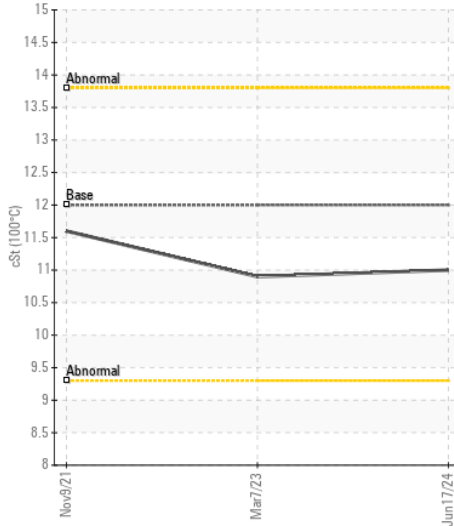
Non-ferrous Metals



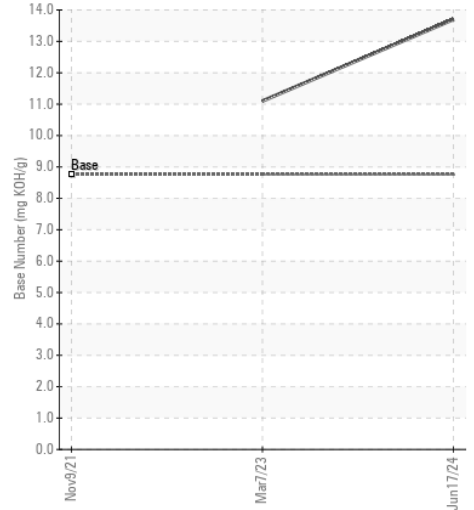
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0272219 **Received** : 25 Jun 2024
Lab Number : 06220476 **Tested** : 26 Jun 2024
Unique Number : 11098673 **Diagnosed** : 27 Jun 2024 - Don Baldrige
Test Package : CONST (Additional Tests: TBN)

JR VINAGRO
 2208 PLAINFIELD PIKE
 JOHNSTON, RI
 US 02919
 Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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