



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
141097-1216 LIEBHERR LH50M 141097-1216
 Component
Diesel Engine
 Fluid
LIEBHERR MOTOROIL 5W30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0023790	DJJ0011158	DJJ0011197
Sample Date		Client Info		14 Jun 2024	13 Feb 2024	02 Aug 2023
Machine Age	hrs	Client Info		4048	3271	2008
Oil Age	hrs	Client Info		0	0	1500
Filter Age	hrs	Client Info		0	0	1500
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	12	13	15
Chromium	ppm	ASTM D5185m	>4	1	<1	1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>8	2	2	3
Lead	ppm	ASTM D5185m	>10	<1	4	<1
Copper	ppm	ASTM D5185m	>74	3	6	22
Tin	ppm	ASTM D5185m	>4	<1	2	<1
Vanadium	ppm	ASTM D5185m		<1	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.

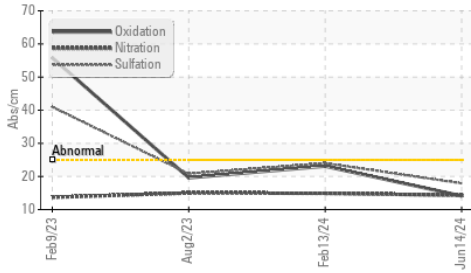
Silicon	ppm	ASTM D5185m	>15	11	10	8
Potassium	ppm	ASTM D5185m	>20	2	0	3
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	14.3	14.9	15.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	24.0	20.8
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

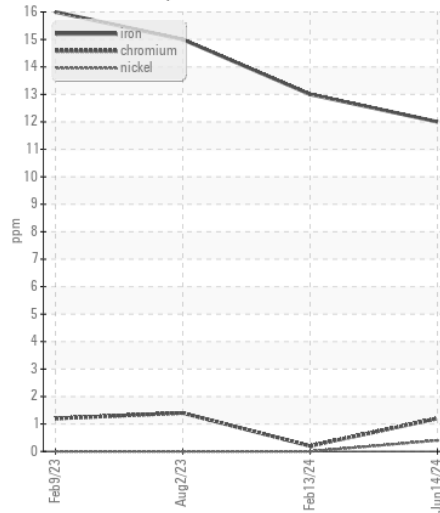
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	2	1
Boron	ppm	ASTM D5185m	236	247	125	163
Barium	ppm	ASTM D5185m	0	<1	<1	4
Molybdenum	ppm	ASTM D5185m	0	4	39	11
Manganese	ppm	ASTM D5185m	<1	<1	0	<1
Magnesium	ppm	ASTM D5185m	25	20	36	139
Calcium	ppm	ASTM D5185m	4298	4426	3319	3626
Phosphorus	ppm	ASTM D5185m	1020	1030	1110	888
Zinc	ppm	ASTM D5185m	1164	1215	1209	1099
Sulfur	ppm	ASTM D5185m	2460	3225	3256	2820
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.1	23.1	19.6
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	13.0	6.4	9.8
Visc @ 100°C	cSt	ASTM D445	12.1	11.4	12.4	11.1

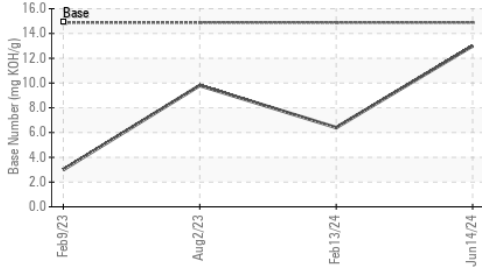
FT-IR (Direct Trend)



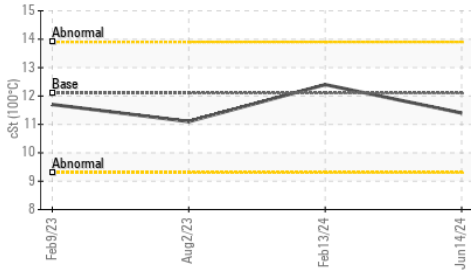
Ferrous Alloys



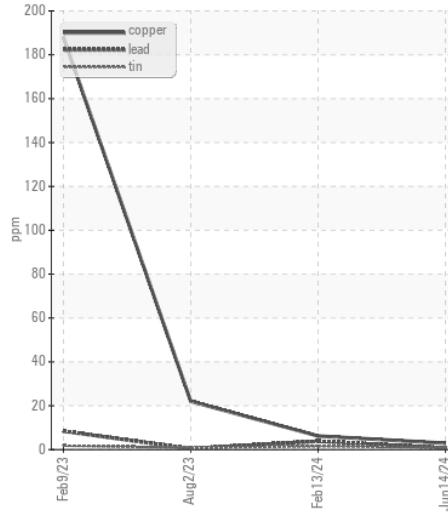
Base Number



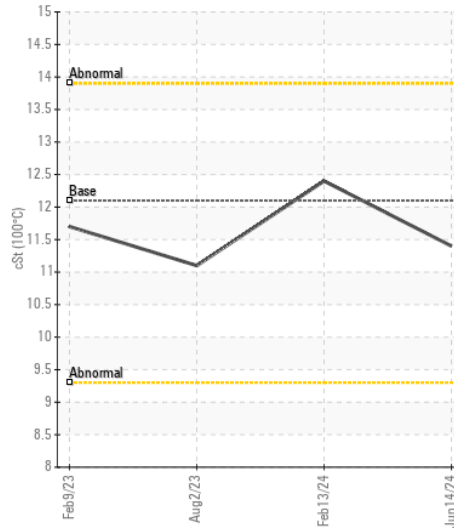
Viscosity @ 100°C



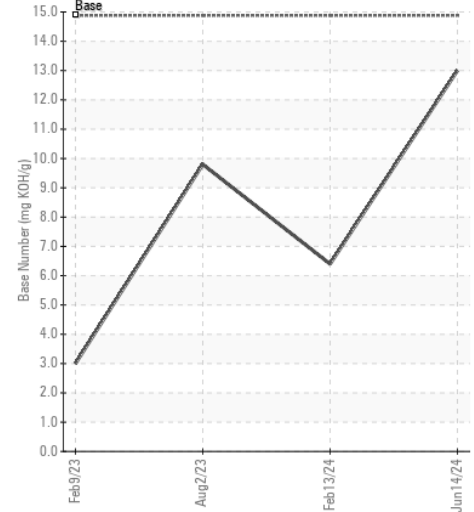
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0023790 **Received** : 18 Jun 2024
Lab Number : 06213117 **Tested** : 19 Jun 2024
Unique Number : 11085981 **Diagnosed** : 19 Jun 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

METAL RECYCLING SERVICES - GASTONIA
 5401 S YORK HWY
 GASTONIA, NC
 US 28052
 Contact: RYAN BOWDEN

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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