



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR R936LC 047283-1490
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 10W-40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0272868	LH0268286	LH0229637
Sample Date		Client Info		11 Feb 2024	13 Oct 2023	09 Dec 2022
Machine Age	hrs	Client Info		3939	3494	1807
Oil Age	hrs	Client Info		0	0	1807
Filter Age	hrs	Client Info		0	0	1807
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Filter Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	9	17	17
Chromium	ppm	ASTM D5185m	>5	<1	<1	1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	3	1	3
Lead	ppm	ASTM D5185m	>30	<1	2	2
Copper	ppm	ASTM D5185m	>125	5	21	10
Tin	ppm	ASTM D5185m	>5	<1	0	2
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

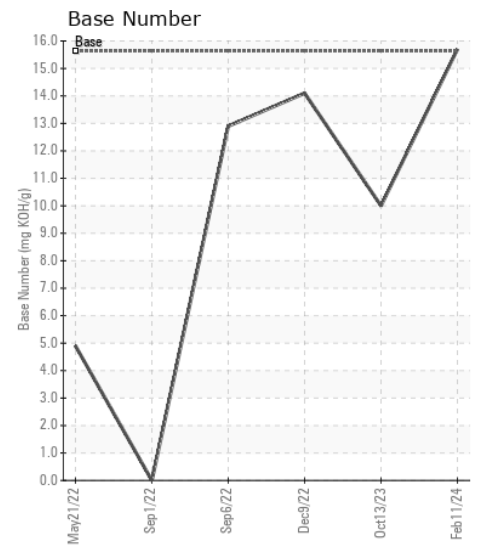
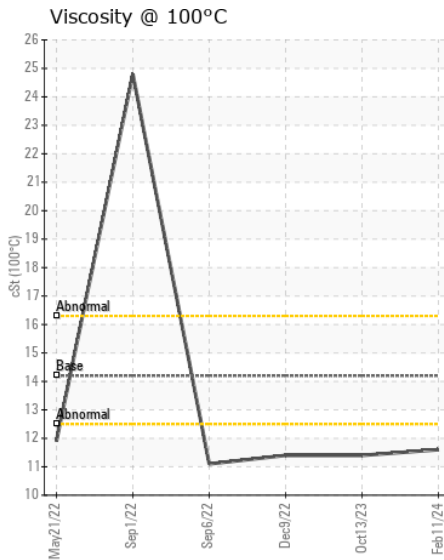
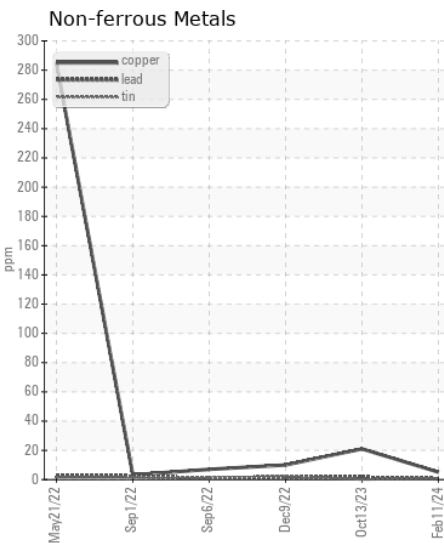
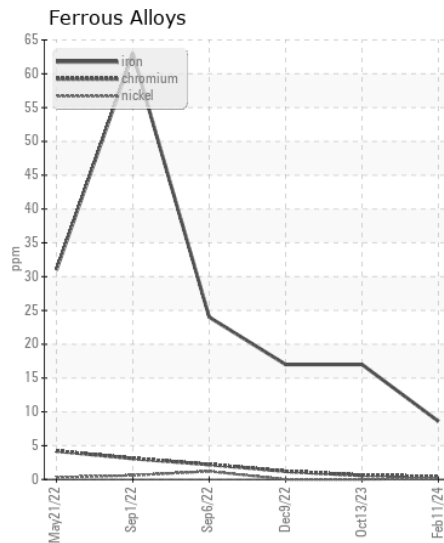
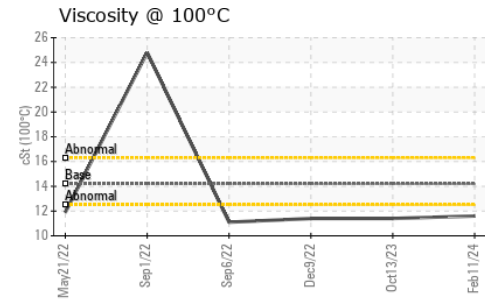
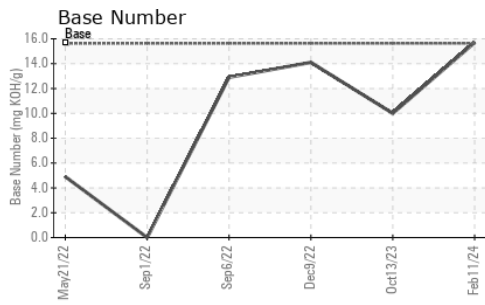
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	16	21	10
Potassium	ppm	ASTM D5185m	>20	3	3	2
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	12.1	14.3	12.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	15.6	19.8	17.7
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		0	0	3
Boron	ppm	ASTM D5185m	245	256	161	256
Barium	ppm	ASTM D5185m	0	2	7	33
Molybdenum	ppm	ASTM D5185m	0	4	11	6
Manganese	ppm	ASTM D5185m	<1	<1	0	<1
Magnesium	ppm	ASTM D5185m	36	65	206	121
Calcium	ppm	ASTM D5185m	4401	4628	3521	4055
Phosphorus	ppm	ASTM D5185m	1067	1018	983	958
Zinc	ppm	ASTM D5185m	1183	1245	1147	1167
Sulfur	ppm	ASTM D5185m	2591	3297	2894	3251
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.2	16.3	14.8
Base Number (BN)	mg KOH/g	ASTM D2896	15.63	15.7	10.0	14.1
Visc @ 100°C	cSt	ASTM D445	14.2	11.6	11.4	11.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0272868 **Received** : 21 Mar 2024
Lab Number : 06125370 **Tested** : 24 Mar 2024
Unique Number : 10939521 **Diagnosed** : 24 Mar 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

M&F CONCRETE PRODUCTS CO
 4002 CATLETT RD
 CATLETT, VA
 US 20119
 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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