



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
LIEBHERR LH40 ML13
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (6 GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0244800	LH0244828	LHMC122828
Sample Date		Client Info		29 Jun 2024	16 Mar 2024	04 Aug 2023
Machine Age	hrs	Client Info		14265	13598	12105
Oil Age	hrs	Client Info		0	500	0
Filter Age	hrs	Client Info		0	500	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	Not Changed	Changed
Sample Status				ATTENTION	ATTENTION	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	7	5	7
Chromium	ppm	ASTM D5185m	>5	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	<1	1
Lead	ppm	ASTM D5185m	>30	0	1	<1
Copper	ppm	ASTM D5185m	>125	5	2	34
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

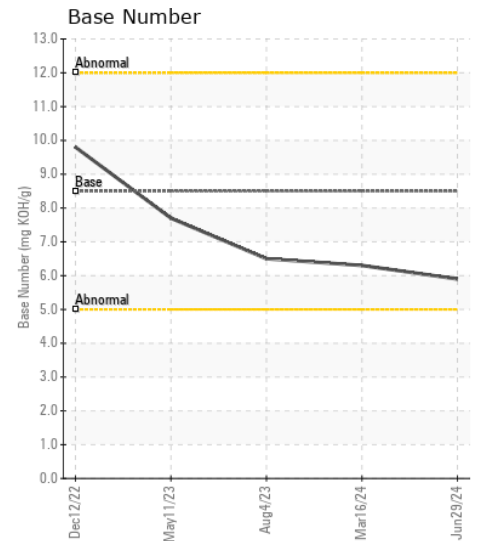
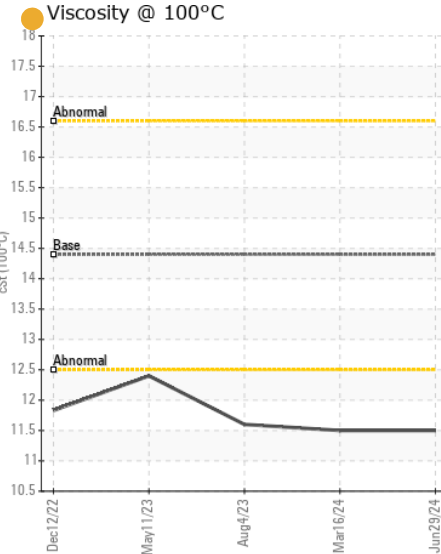
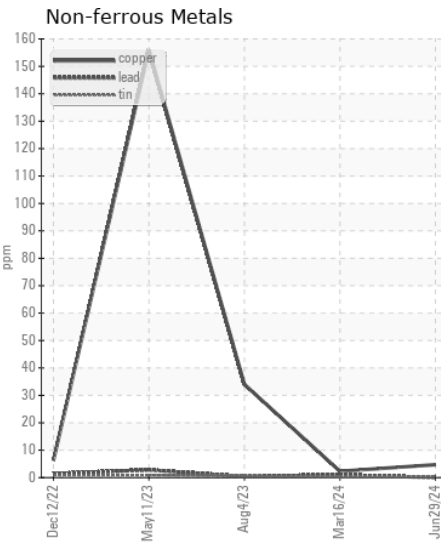
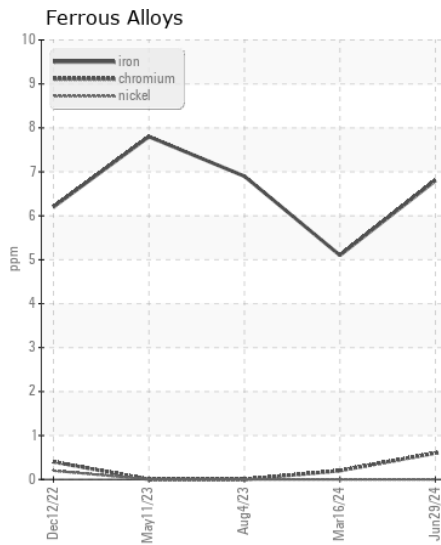
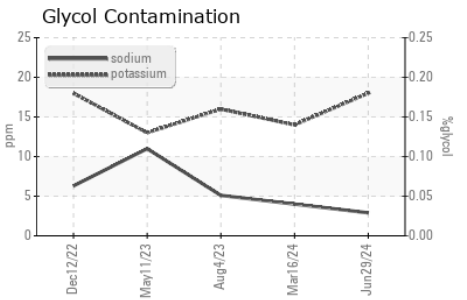
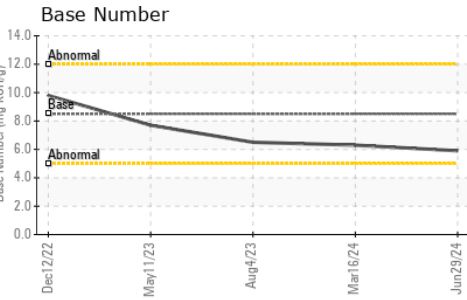
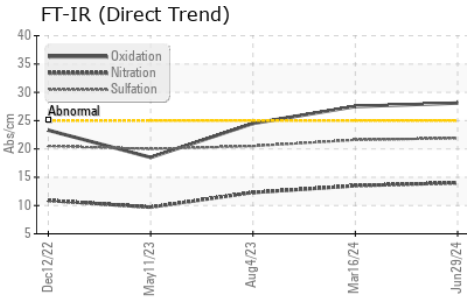
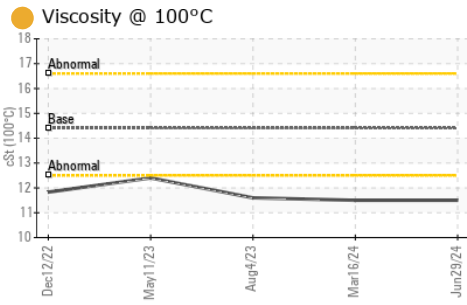
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	4	7	7
Potassium	ppm	ASTM D5185m	>20	18	14	16
Fuel		WC Method	>5	<1.0	<1.0	▲ 2.1
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	14.0	13.5	12.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	21.6	20.5
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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m	>158	3	4	5
Boron	ppm	ASTM D5185m	250	3	12	1
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	3	10	9
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	450	128	196	193
Calcium	ppm	ASTM D5185m	3000	2511	2385	2197
Phosphorus	ppm	ASTM D5185m	1150	774	769	703
Zinc	ppm	ASTM D5185m	1350	848	921	844
Sulfur	ppm	ASTM D5185m	4250	2968	3787	3324
Oxidation	Abs/.1mm	*ASTM D7414	>25	28.1	27.5	24.5
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.9	6.3	6.5
Visc @ 100°C	cSt	ASTM D445	14.4	● 11.5	● 11.5	● 11.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0244800 **Received** : 12 Jul 2024
Lab Number : 06234701 **Tested** : 15 Jul 2024
Unique Number : 11123535 **Diagnosed** : 15 Jul 2024 - Don Baldrige
Test Package : CONST (Additional Tests: Glycol, TBN)

OSCAR WINSKI CO. INC
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 LAFAYETTE, IN
 US 47904
 Contact: JAYSON FRAZIER
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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)

T: (765)376-1230

F: x: