



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR 1300 CR3310 (S/N 138 360)
 Component
Diesel Engine
 Fluid
SHELL ROTELLA T 5W40 (11 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0922258	WC0877458	WC0823511
Sample Date		Client Info		21 May 2024	27 Mar 2024	12 Dec 2023
Machine Age	hrs	Client Info		9382	9115	8834
Oil Age	hrs	Client Info		250	250	371
Filter Age	hrs	Client Info		250	250	371
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	>100	2	0	4
Chromium	ppm	ASTM D5185m	>5	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	<1	2
Lead	ppm	ASTM D5185m	>30	<1	0	0
Copper	ppm	ASTM D5185m	>125	<1	0	4
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

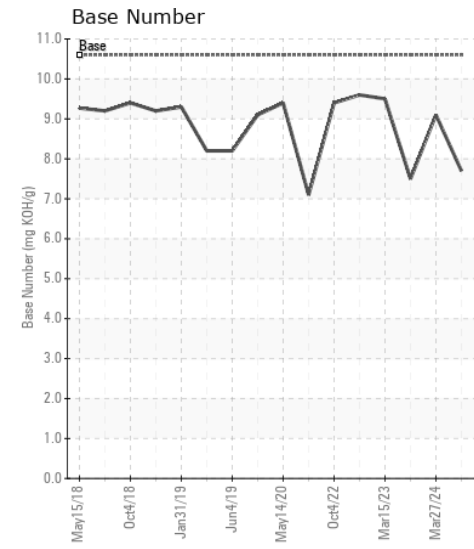
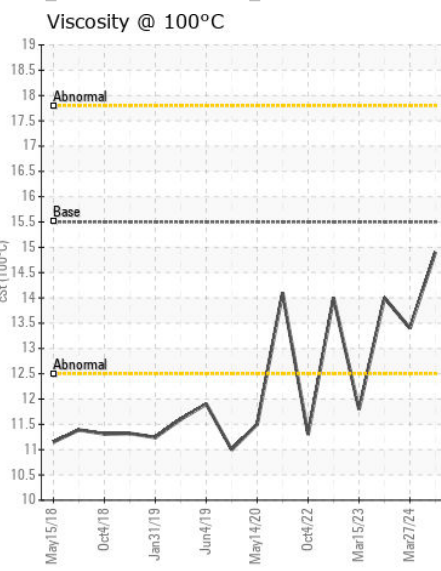
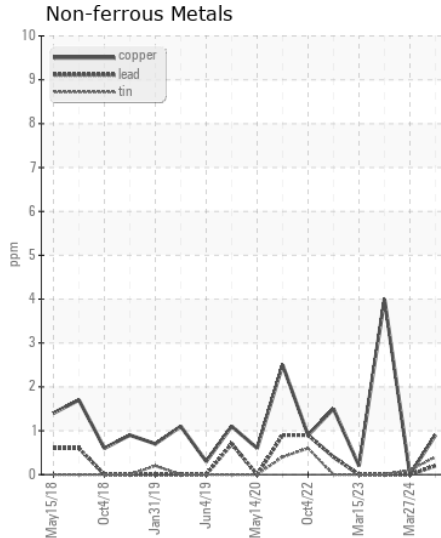
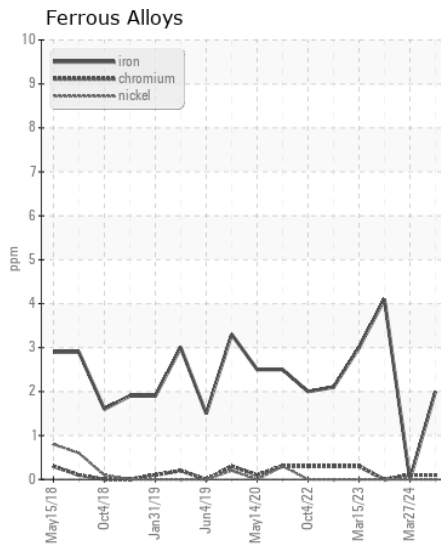
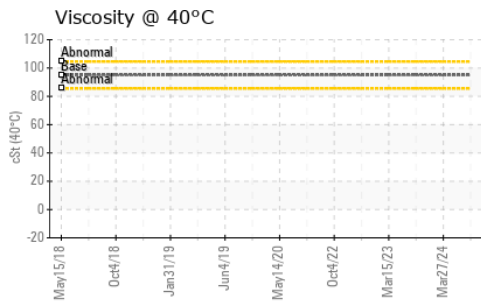
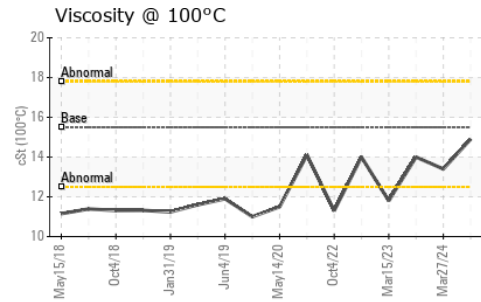
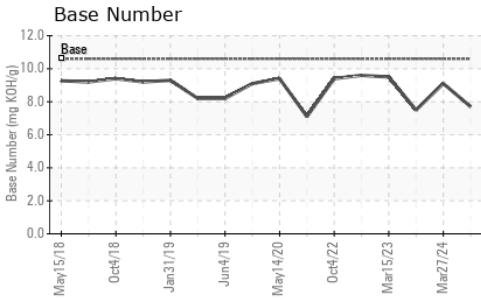
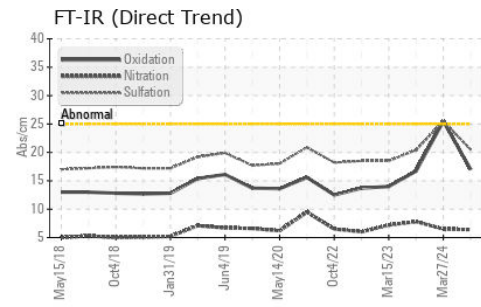
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	6	4	6
Potassium	ppm	ASTM D5185m	>20	3	<1	11
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	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.4	6.5	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.5	25.5	20.4
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	0	2
Boron	ppm	ASTM D5185m		183	53	141
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		7	49	8
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m		185	873	122
Calcium	ppm	ASTM D5185m		1917	1017	2036
Phosphorus	ppm	ASTM D5185m		896	992	886
Zinc	ppm	ASTM D5185m		1145	1178	1169
Sulfur	ppm	ASTM D5185m		3684	3424	3276
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.0	25.5	16.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	7.7	9.1	7.5
Visc @ 100°C	cSt	ASTM D445	15.5	14.9	13.4	14.0



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0922258
Lab Number : 06209863
Unique Number : 11082727
Test Package : CONST (Additional Tests: KV40, TBN)

Received : 14 Jun 2024
Tested : 17 Jun 2024
Diagnosed : 17 Jun 2024 - Angela Borella

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Certificate L2367
 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)