



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
(336341)
Machine Id
048022-1476
Component
Diesel Engine
Fluid
TOTAL RUBIA OPTIMA 1100 FE 10W30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0227627	LH0251817	LH0215997
Sample Date		Client Info		08 May 2024	09 Mar 2023	21 Apr 2022
Machine Age	hrs	Client Info		4352	2959	2051
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	2	1	5
Chromium	ppm	ASTM D5185(m)	>5	0	0	<1
Nickel	ppm	ASTM D5185(m)	>5	0	<1	0
Titanium	ppm	ASTM D5185(m)		0	<1	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	2	2	3
Lead	ppm	ASTM D5185(m)	>30	0	0	<1
Copper	ppm	ASTM D5185(m)	>125	<1	<1	5
Tin	ppm	ASTM D5185(m)	>5	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

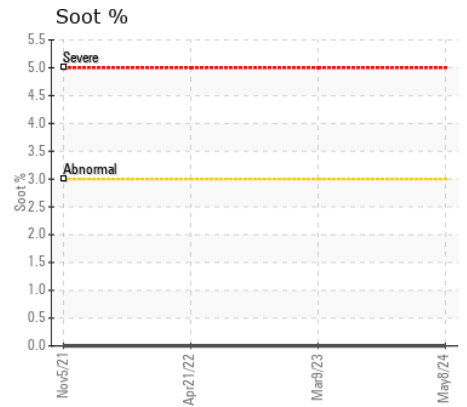
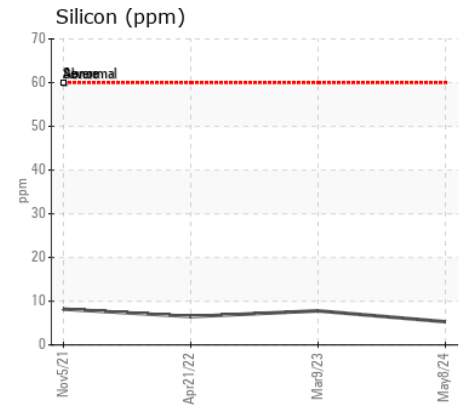
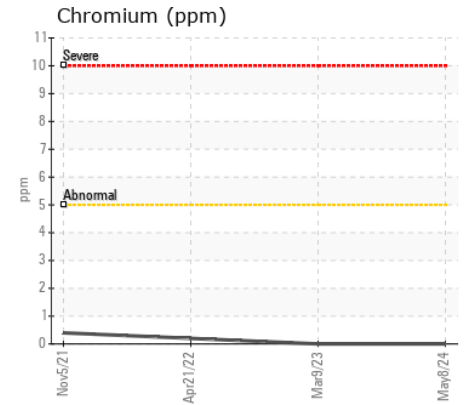
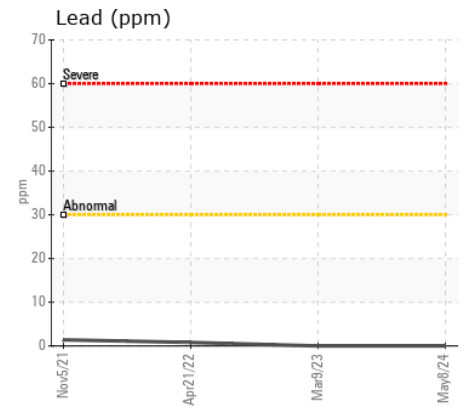
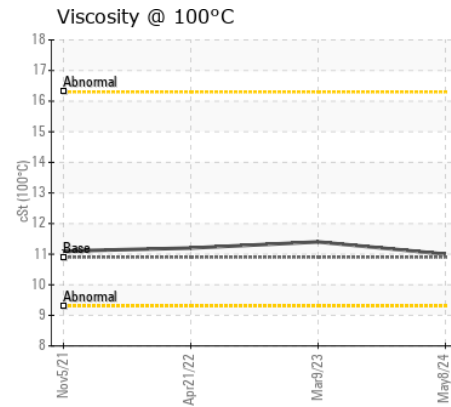
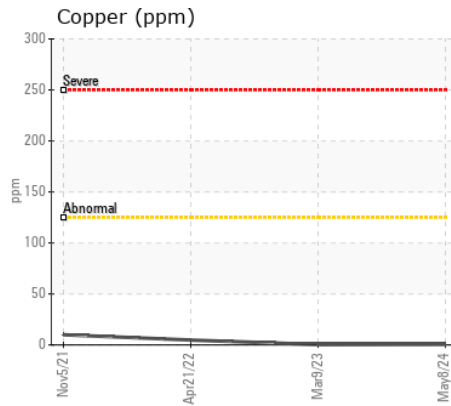
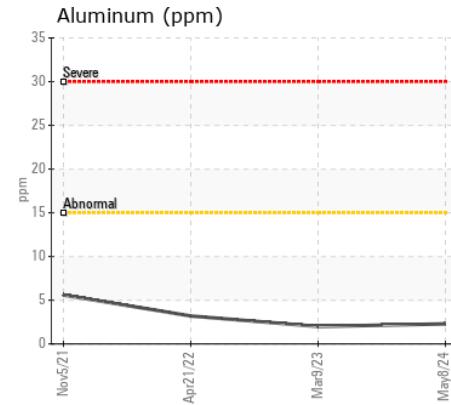
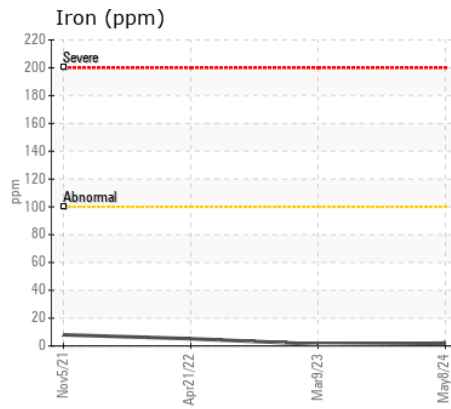
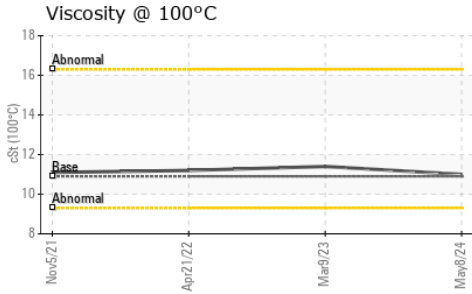
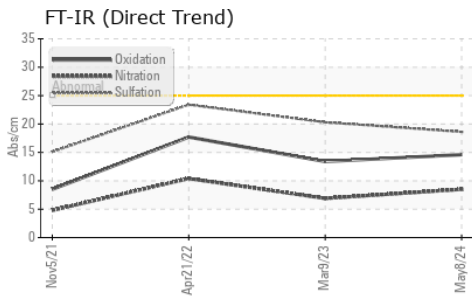
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>60	5	8	6
Potassium	ppm	ASTM D5185(m)	>20	1	<1	4
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	0
Nitration	Abs/cm	ASTM D7624*	>20	8.5	6.9	10.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	18.6	20.3	23.4
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		2	2	2
Boron	ppm	ASTM D5185(m)		50	51	39
Barium	ppm	ASTM D5185(m)		0	0	<1
Molybdenum	ppm	ASTM D5185(m)		85	77	88
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		63	239	28
Calcium	ppm	ASTM D5185(m)		2104	1883	2175
Phosphorus	ppm	ASTM D5185(m)		986	1061	1050
Zinc	ppm	ASTM D5185(m)		1115	1118	1170
Sulfur	ppm	ASTM D5185(m)		3068	3036	3115
Oxidation	Abs/.1mm	ASTM D7414*	>25	14.6	13.4	17.7
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	11.0	11.4	11.2



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0227627 **Received** : 09 May 2024
Lab Number : 02634275 **Tested** : 09 May 2024
Unique Number : 5775428 **Diagnosed** : 09 May 2024 - Wes Davis
Test Package : MOB 1

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 Hamilton, ON
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To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.