



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Machine Id
LIEBHERR LH60M 146313-1217
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0286928	LH0286972	LH0278625
Sample Date		Client Info		17 Jun 2024	16 Apr 2024	21 Jan 2024
Machine Age	hrs	Client Info		3178	2658	2083
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	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	5	5	5
Chromium	ppm	ASTM D5185(m)	>5	<1	0	<1
Nickel	ppm	ASTM D5185(m)	>5	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>15	2	2	2
Lead	ppm	ASTM D5185(m)	>30	0	0	<1
Copper	ppm	ASTM D5185(m)	>125	2	5	3
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	VLITE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

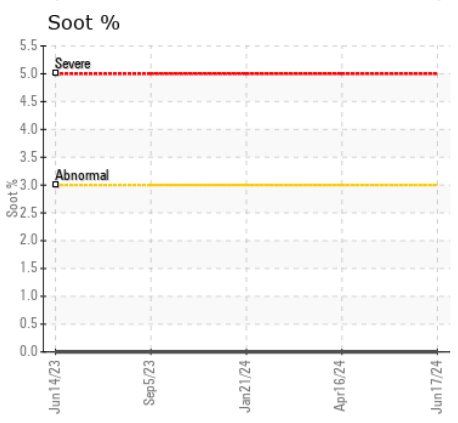
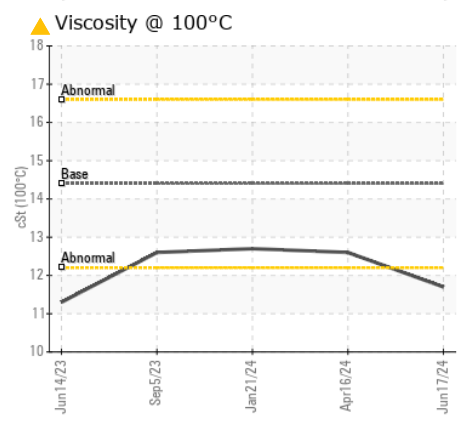
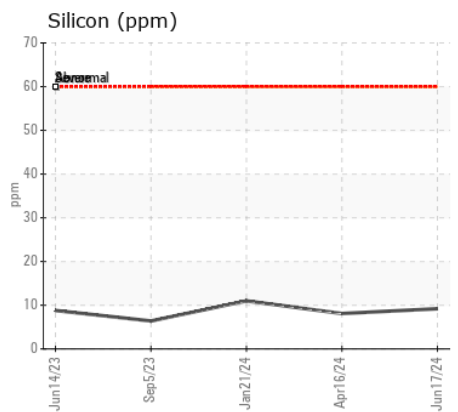
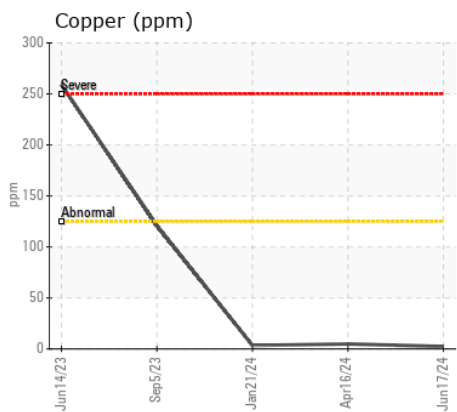
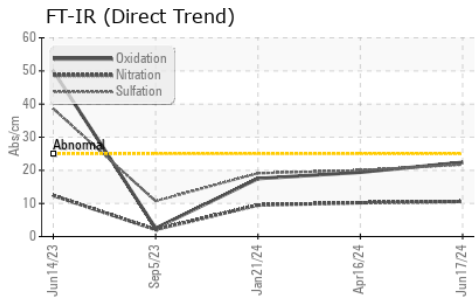
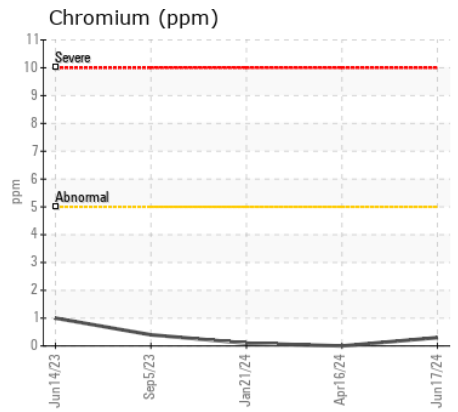
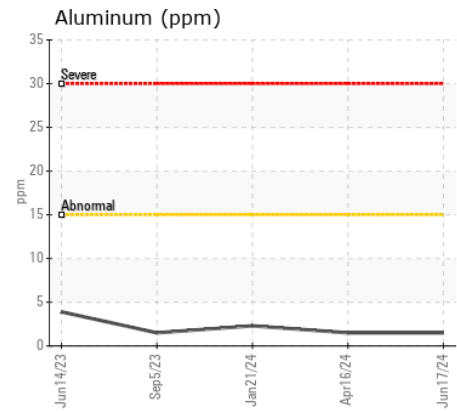
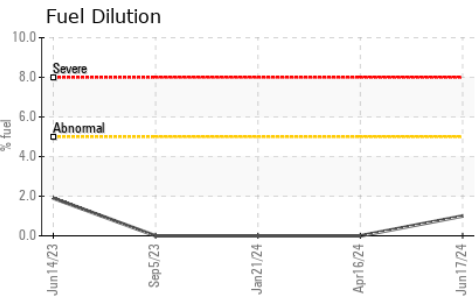
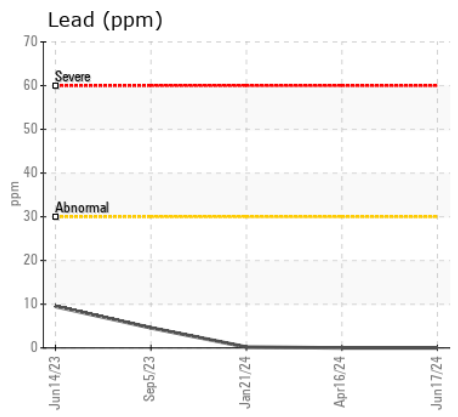
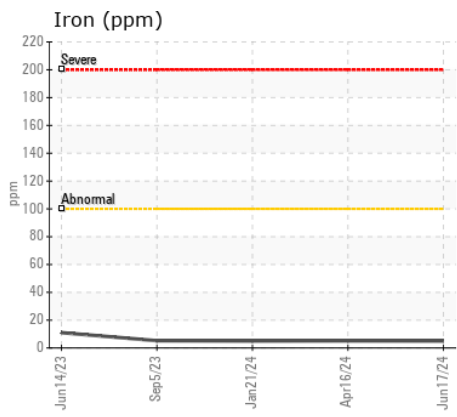
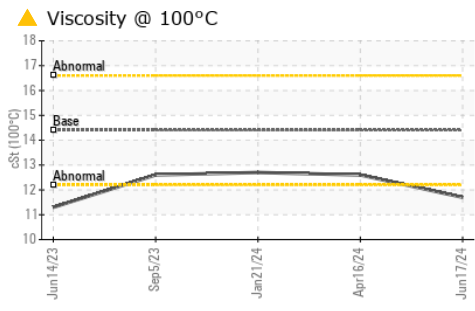
Light fuel dilution occurring. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185(m)	>60	9	8	11
Potassium	ppm	ASTM D5185(m)	>20	2	<1	3
Fuel	%	ASTM D7593*	>5	1	<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	10.6	10.2	9.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.7	20.0	19.1
Silt	scalar	Visual*	NONE	NONE	VLITE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE	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

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>216	5	2	2
Boron	ppm	ASTM D5185(m)	250	19	6	10
Barium	ppm	ASTM D5185(m)	10	<1	<1	<1
Molybdenum	ppm	ASTM D5185(m)	100	59	56	51
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)	450	1080	976	918
Calcium	ppm	ASTM D5185(m)	3000	880	1094	1113
Phosphorus	ppm	ASTM D5185(m)	1150	1005	993	964
Zinc	ppm	ASTM D5185(m)	1350	1219	1185	1123
Sulfur	ppm	ASTM D5185(m)	4250	2721	2551	2830
Oxidation	Abs/.1mm	ASTM D7414*	>25	22.4	19.4	17.5
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	▲ 11.7	12.6	12.7



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0286928 **Received** : 18 Jun 2024
Lab Number : 02642494 **Tested** : 19 Jun 2024
Unique Number : 5800033 **Diagnosed** : 19 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, Visual)

WENTWORTH METAL RECYCLING
 495 WENTWORTH STREET NORTH
 HAMILTON, ON
 CA L8L 5X1
 Contact: Jaason
 jaason@wentworthrecycling.com

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.