



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Area
(358361)
Machine Id
LIEBHERR LH40M 133820-1215
Component
Diesel Engine
Fluid
PETRO CANADA 10W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as PETRO CANADA 10W40, however, a fluid match indicates that this fluid is SAE 30 Diesel Engine Oil. Please confirm the oil type and grade on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0289703	LH0289644	LH0256535
Sample Date		Client Info		10 Jun 2024	10 Jun 2024	29 Mar 2023
Machine Age	hrs	Client Info		9259	2606	1521
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	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	3	7	4
Chromium	ppm	ASTM D5185(m)	>5	0	<1	<1
Nickel	ppm	ASTM D5185(m)	>5	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
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	1	2
Copper	ppm	ASTM D5185(m)	>125	7	17	64
Tin	ppm	ASTM D5185(m)	>5	0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	VLITE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

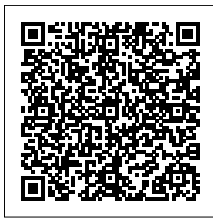
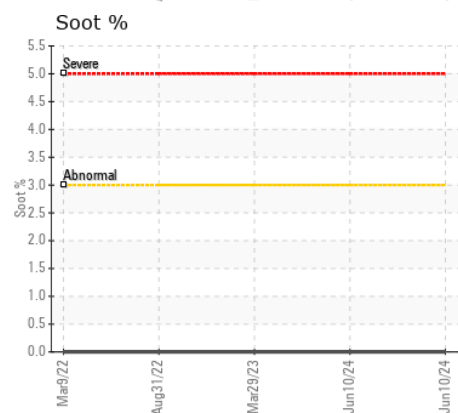
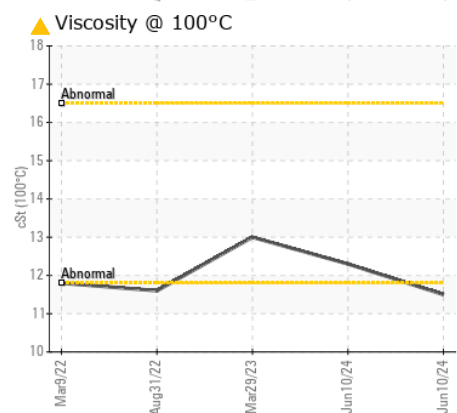
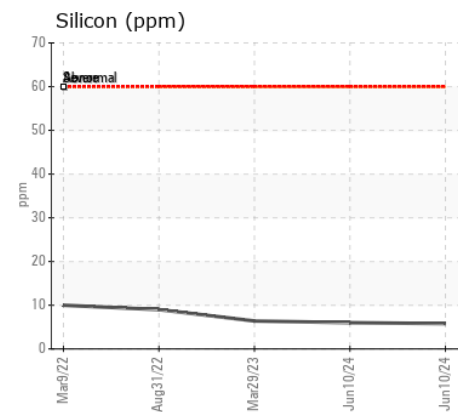
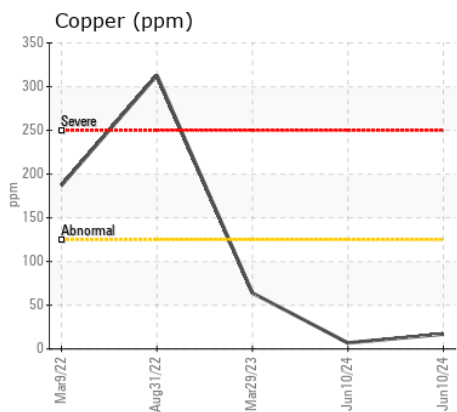
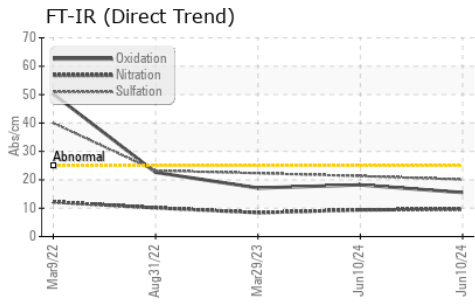
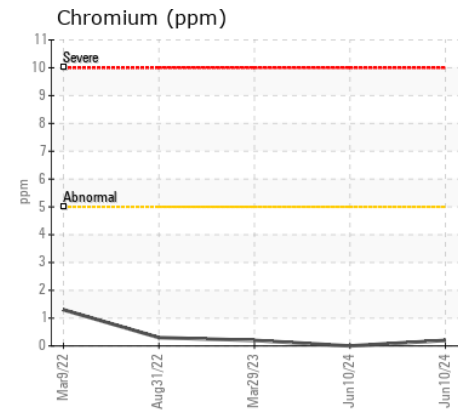
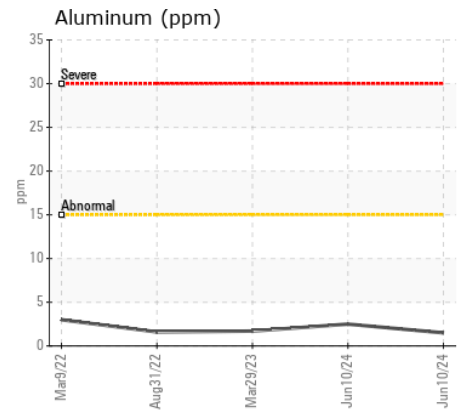
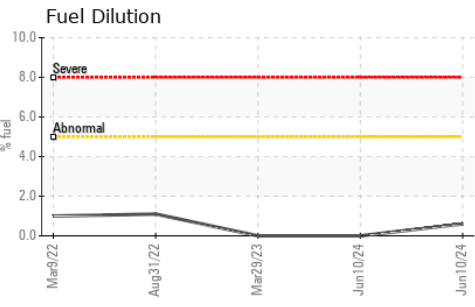
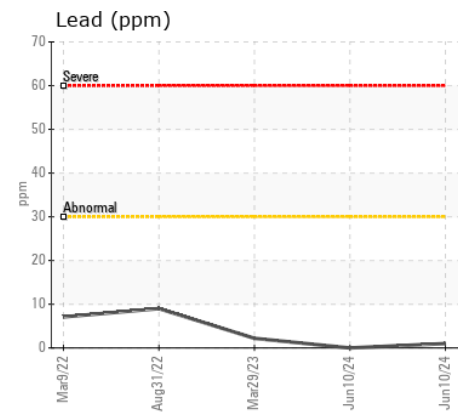
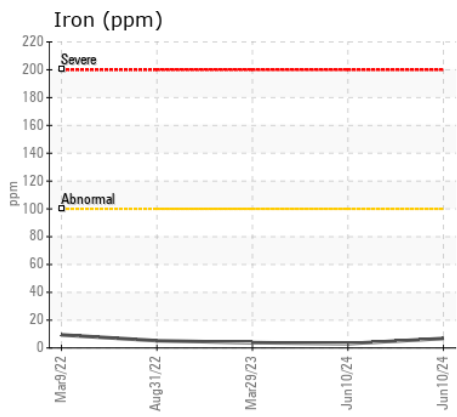
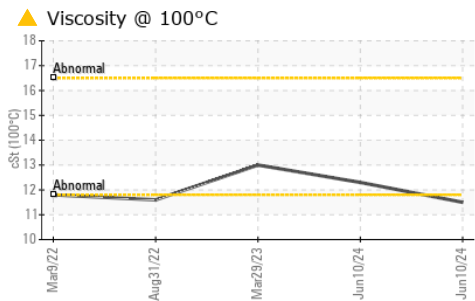
Fuel content negligible. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>60	6	6	6
Potassium	ppm	ASTM D5185(m)	>20	1	2	1
Fuel	%	ASTM D7593*	>5	0.6	<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	9.6	9.4	8.4
Sulfation	Abs/.1mm	ASTM D7415*	>30	20.1	21.3	22.3
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	VLITE	VLITE	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. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)	>20	2	2	2
Boron	ppm	ASTM D5185(m)		40	12	3
Barium	ppm	ASTM D5185(m)		0	1	<1
Molybdenum	ppm	ASTM D5185(m)		85	63	58
Manganese	ppm	ASTM D5185(m)		0	<1	<1
Magnesium	ppm	ASTM D5185(m)		206	961	995
Calcium	ppm	ASTM D5185(m)		2038	1094	1094
Phosphorus	ppm	ASTM D5185(m)		1005	898	1058
Zinc	ppm	ASTM D5185(m)		1183	1169	1199
Sulfur	ppm	ASTM D5185(m)		3066	2216	2402
Oxidation	Abs/.1mm	ASTM D7414*	>25	15.5	18.2	17.1
Visc @ 100°C	cSt	ASTM D7279(m)		▲ 11.5	12.3	13.0



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0289703 **Received** : 11 Jun 2024
Lab Number : 02640992 **Tested** : 12 Jun 2024
Unique Number : 5798531 **Diagnosed** : 12 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, Visual)

METALOGICS INC.
 895 COLLINSON RD.
 DUNDAS, ON
 CA L9H 5E2
 Contact: Service Manager

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.

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