



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
AMR-Manchester
 Machine Id
146889 LIEBHERR 146889
 Component
Rear Right Wheel Hub
 Fluid
LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0013968	DJJ0003540	---
Sample Date		Client Info		27 Mar 2024	08 Nov 2023	---
Machine Age	hrs	Client Info		1079	518	---
Oil Age	hrs	Client Info		500	518	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		N/A	N/A	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>500	42	34	---
Chromium	ppm	ASTM D5185m	>8	0	0	---
Nickel	ppm	ASTM D5185m	>5	0	0	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m	>5	1	0	---
Lead	ppm	ASTM D5185m	>5	0	0	---
Copper	ppm	ASTM D5185m	>50	46	41	---
Tin	ppm	ASTM D5185m		0	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

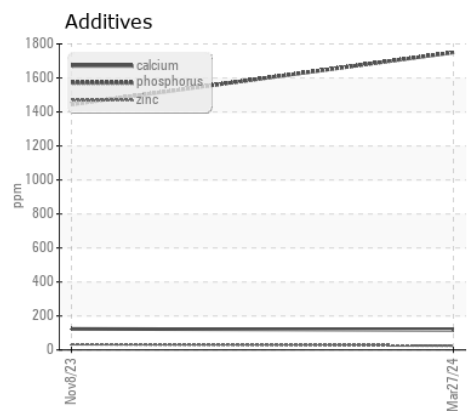
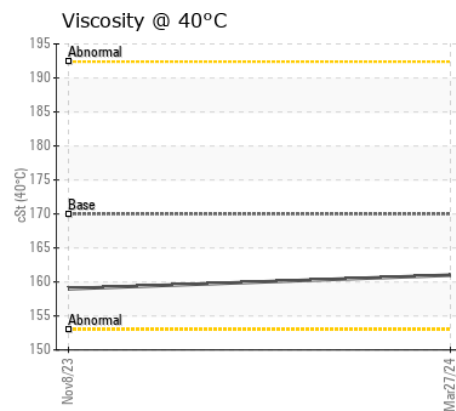
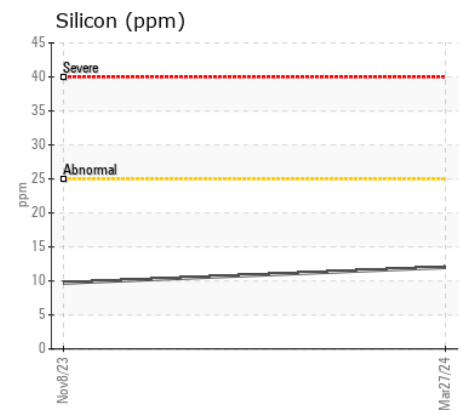
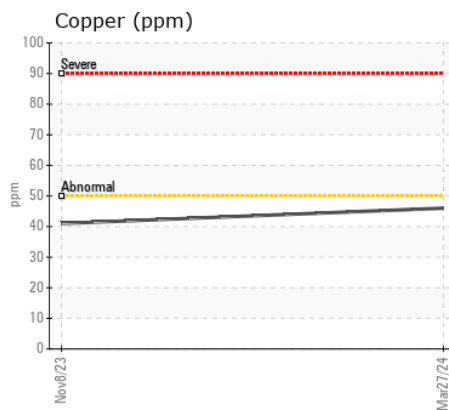
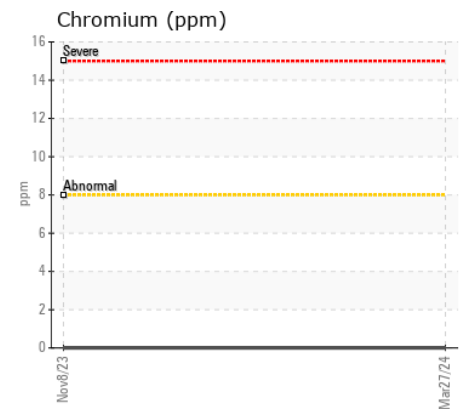
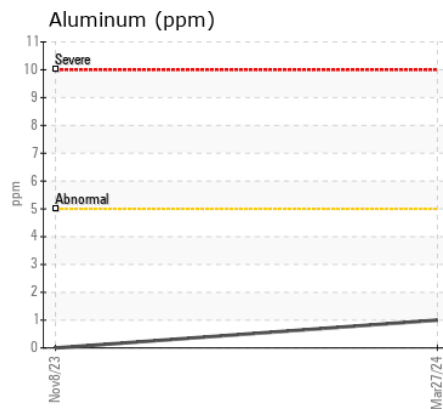
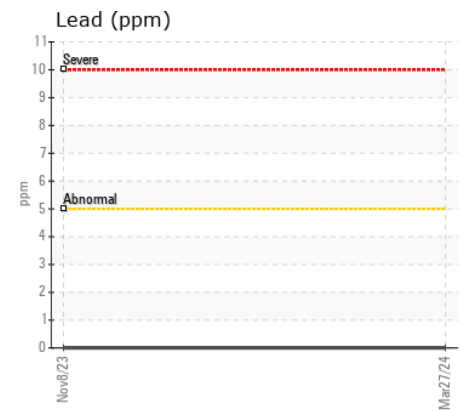
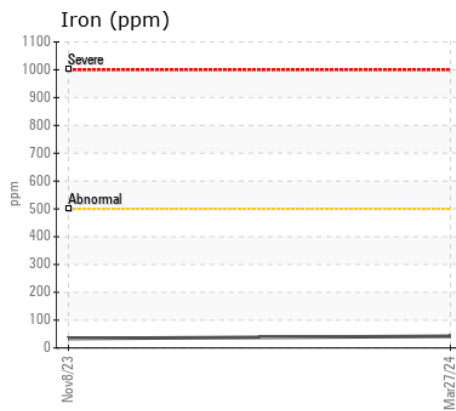
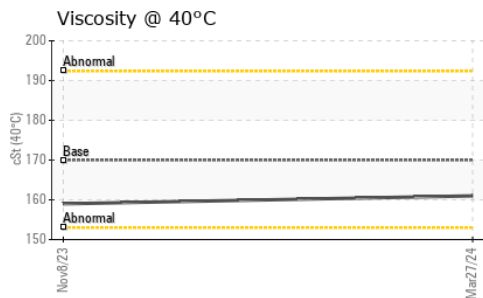
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	12	10	---
Potassium	ppm	ASTM D5185m	>20	<1	<1	---
Water		WC Method	>0.2	NEG	NEG	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		3	2	---
Boron	ppm	ASTM D5185m	0	8	3	---
Barium	ppm	ASTM D5185m	0	1	0	---
Molybdenum	ppm	ASTM D5185m	0	1	<1	---
Manganese	ppm	ASTM D5185m	0	2	1	---
Magnesium	ppm	ASTM D5185m	<1	0	0	---
Calcium	ppm	ASTM D5185m	<1	118	124	---
Phosphorus	ppm	ASTM D5185m	2143	1750	1444	---
Zinc	ppm	ASTM D5185m	<1	25	33	---
Sulfur	ppm	ASTM D5185m	23468	25760	20585	---
Visc @ 40°C	cSt	ASTM D445	170	161	159	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0013968
Lab Number : 06147662
Unique Number : 10977740
Test Package : MOBCE

Received : 12 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 15 Apr 2024 - Wes Davis

ADVANTAGE METALS RECYCLING - MANCHESTER
 3005 MANCHESTER TRAFFICWAY
 KANSAS CITY, MO
 US 64129

Contact: STEVE BROWN
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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)

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