



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH80M 155277-1218
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 5W-30 LOW ASH (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0243738	LH0191253	LH0191255
Sample Date		Client Info		14 Mar 2024	01 Mar 2024	11 Feb 2024
Machine Age	hrs	Client Info		1050	850	600
Oil Age	hrs	Client Info		200	250	238
Filter Age	hrs	Client Info		200	250	238
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	6	5	1
Chromium	ppm	ASTM D5185m	>5	<1	0	0
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	3	1	<1
Lead	ppm	ASTM D5185m	>30	0	0	0
Copper	ppm	ASTM D5185m	>125	1	1	2
Tin	ppm	ASTM D5185m	>5	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

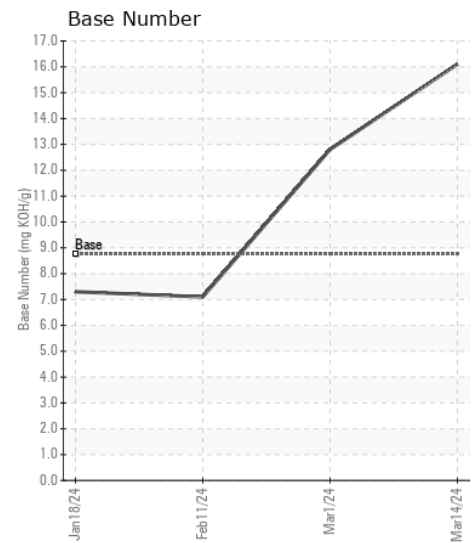
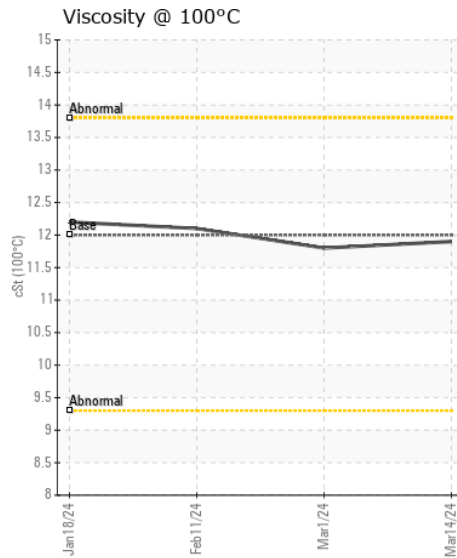
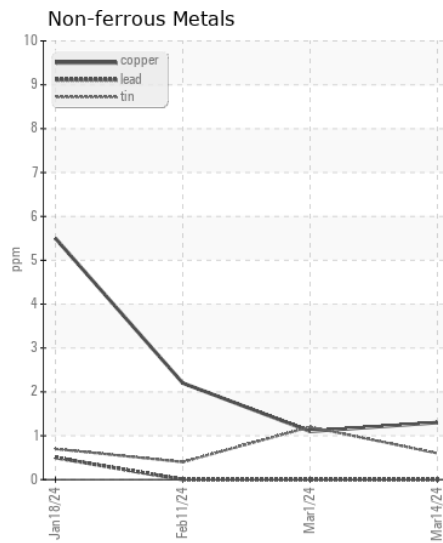
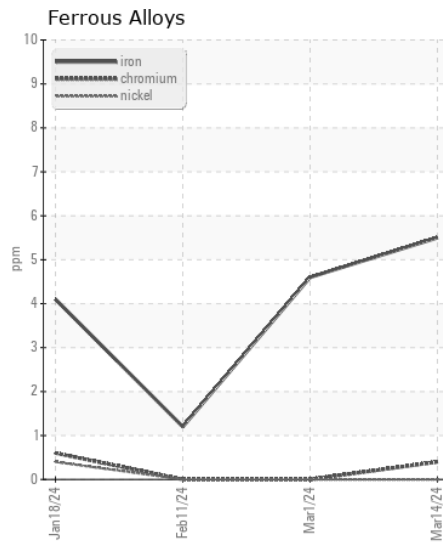
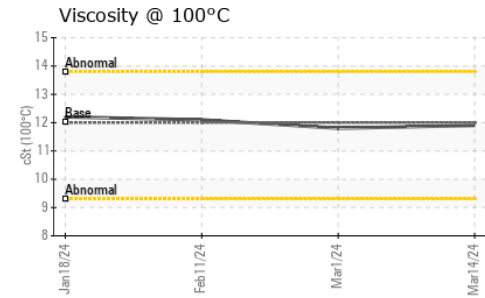
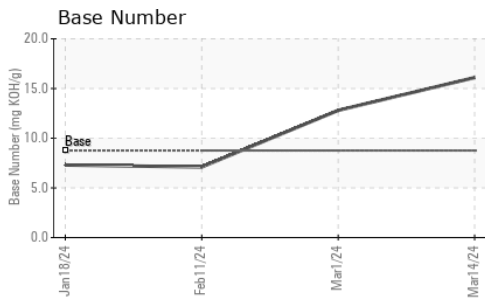
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	8	7	6
Potassium	ppm	ASTM D5185m	>20	3	0	3
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	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.7	10.7	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	14.7	16.1	18.7
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		0	2	2
Boron	ppm	ASTM D5185m	2	269	186	87
Barium	ppm	ASTM D5185m	0	2	0	0
Molybdenum	ppm	ASTM D5185m	<1	3	1	0
Manganese	ppm	ASTM D5185m	<1	<1	0	<1
Magnesium	ppm	ASTM D5185m	12	73	288	685
Calcium	ppm	ASTM D5185m	2224	4448	3388	1161
Phosphorus	ppm	ASTM D5185m	635	990	950	690
Zinc	ppm	ASTM D5185m	718	1182	1094	763
Sulfur	ppm	ASTM D5185m	1694	3230	3131	2627
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.6	12.3	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.76	16.1	12.8	7.1
Visc @ 100°C	cSt	ASTM D445	12.0	11.9	11.8	12.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0243738 **Received** : 21 Mar 2024
Lab Number : 06125368 **Tested** : 25 Mar 2024
Unique Number : 10939519 **Diagnosed** : 25 Mar 2024 - Sean Felton
Test Package : CONST (Additional Tests: TBN)

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)

NUCOR STEEL
 2911 E NUCOR RD
 NORFOLK, NE
 US 68702

Contact: MARK EICHBERGER
 mark.eichberger@nucor.com

T: (402)750-5100
 F: (402)644-0389