CONST

LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LH60 122926-1217
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 5W30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

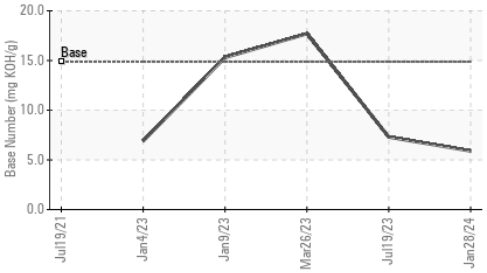
There is no indication of any contamination in the oil.

FLUID CONDITION

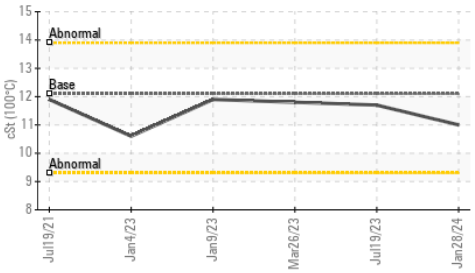
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0268845	LH0267442	LH0254148
Sample Date		Client Info		28 Jan 2024	19 Jul 2023	26 Mar 2023
Machine Age	hrs	Client Info		3407	2976	0
Oil Age	hrs	Client Info		3407	300	0
Filter Age	hrs	Client Info		3407	300	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	6	4	4
Chromium	ppm	ASTM D5185m	>5	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	3	3
Lead	ppm	ASTM D5185m	>30	3	0	0
Copper	ppm	ASTM D5185m	>125	3	1	<1
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>60	8	8	9
Potassium	ppm	ASTM D5185m	>20	3	8	0
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	11.9	9.6	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.6	18.4	13.8
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
Sodium	ppm	ASTM D5185m		3	10	2
Boron	ppm	ASTM D5185m	236	63	92	271
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	1	1
Manganese	ppm	ASTM D5185m	<1	<1	<1	1
Magnesium	ppm	ASTM D5185m	25	588	590	35
Calcium	ppm	ASTM D5185m	4298	1736	1578	4421
Phosphorus	ppm	ASTM D5185m	1020	773	695	1009
Zinc	ppm	ASTM D5185m	1164	867	827	1223
Sulfur	ppm	ASTM D5185m	2460	2814	2992	3058
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.4	13.7	8.8
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	5.9	7.3	17.7
Visc @ 100°C	cSt	ASTM D445	12.1	11.0	11.7	11.8

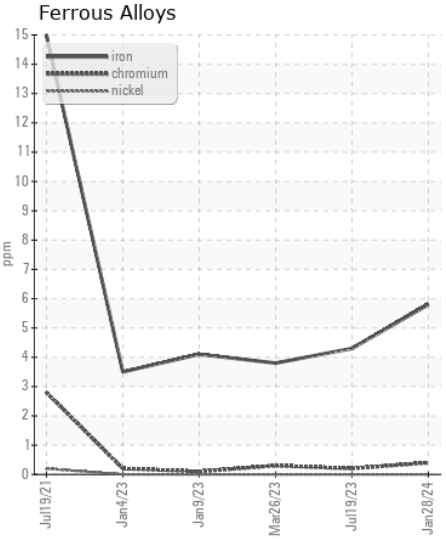
Base Number



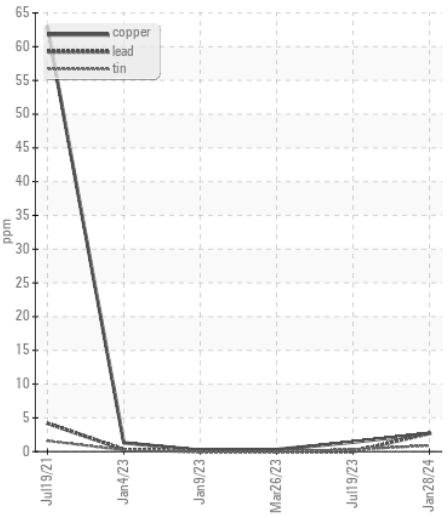
Viscosity @ 100°C



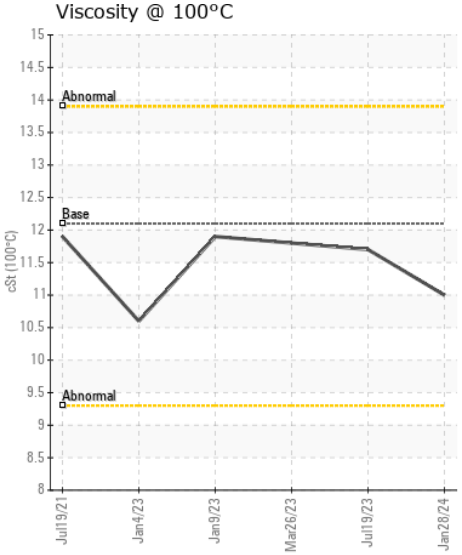
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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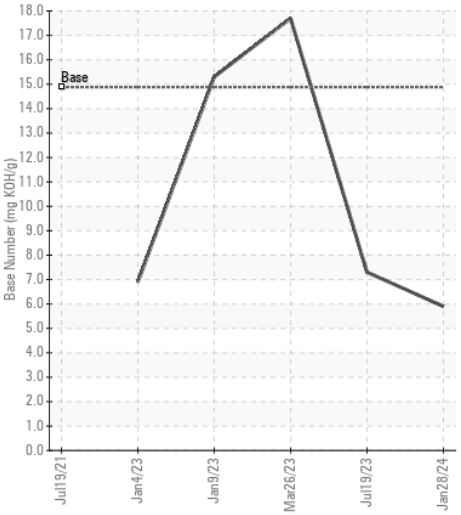

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0268845
Lab Number : 06105038
Unique Number : 10903268
Test Package : CONST (Additional Tests: TBN)

Received : 29 Feb 2024
Tested : 01 Mar 2024
Diagnosed : 04 Mar 2024 - Sean Felton

SIMS METAL MANAGEMENT
3220 DEEPWATER TERMINAL RD
RICHMOND, VA
US 23234
Contact: Service Manager

T: (703)392-0111
F:

Certificate L2367

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)