



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**106090-1216 LIEBHERR LH50 106090-1216**

Component  
**Diesel Engine**

Fluid  
**DIESEL ENGINE OIL SAE 5W30 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DJJ0021708</b>	DJJ0015718	DJJ001868
Sample Date		Client Info		<b>09 Feb 2024</b>	18 Jan 2023	08 Mar 2022
Machine Age	hrs	Client Info		<b>0</b>	8901	7327
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	<b>6</b>	7	4
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>1</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>8	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>10	<b>1</b>	<1	3
Copper	ppm	ASTM D5185m	>74	<b>2</b>	2	2
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

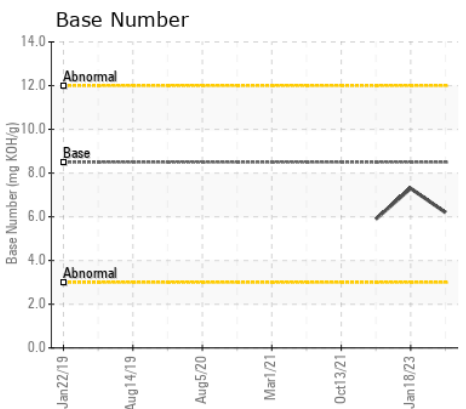
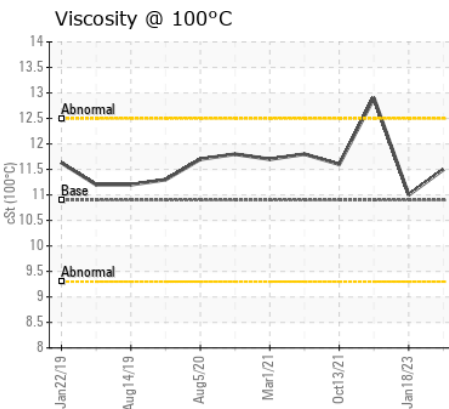
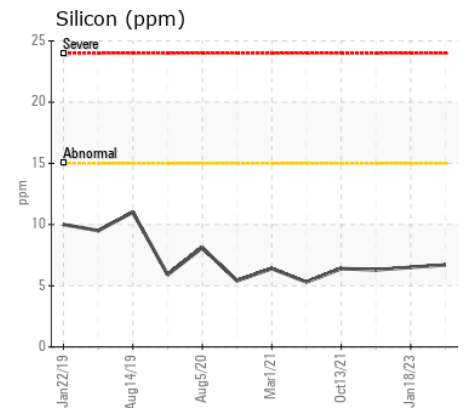
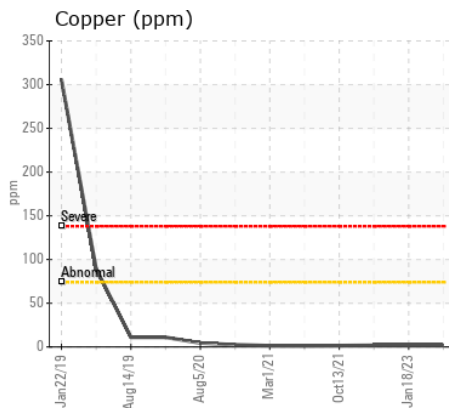
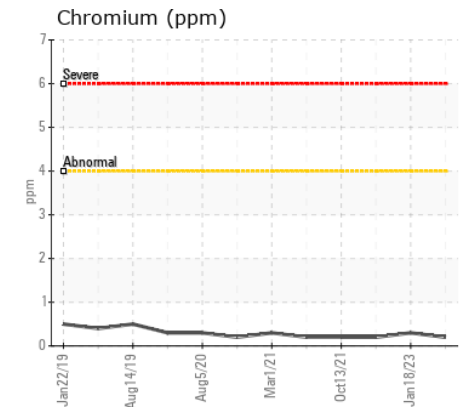
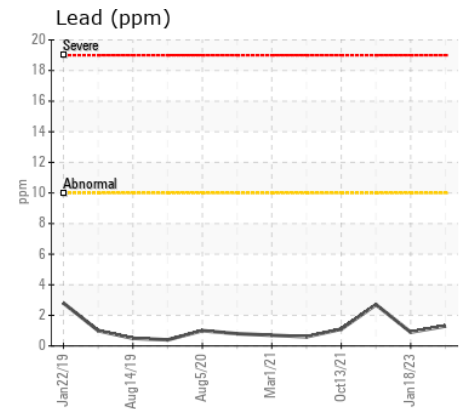
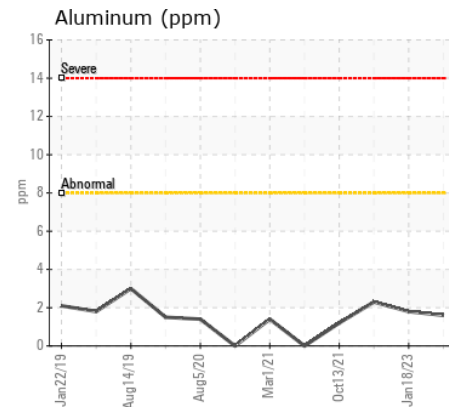
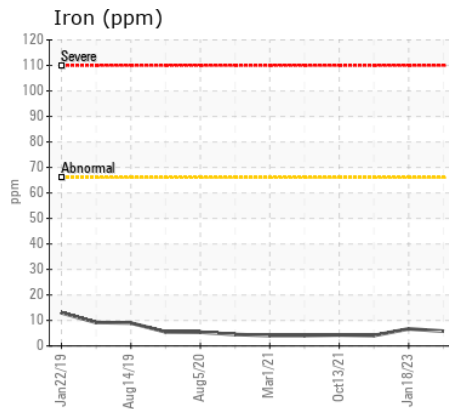
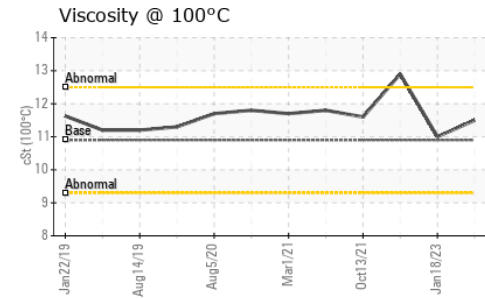
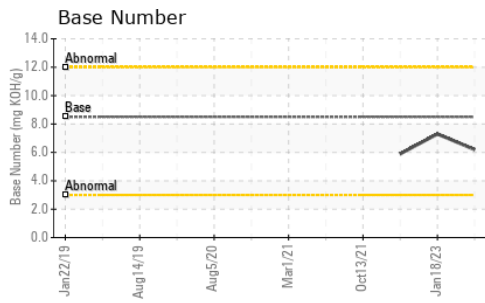
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>7</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	<1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.6</b>	11.8	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.2</b>	20.7	21.1
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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		<b>0</b>	3	2
Boron	ppm	ASTM D5185m	250	<b>64</b>	67	49
Barium	ppm	ASTM D5185m	10	<b>12</b>	2	0
Molybdenum	ppm	ASTM D5185m	100	<b>47</b>	44	73
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>850</b>	853	321
Calcium	ppm	ASTM D5185m	3000	<b>1231</b>	1251	1902
Phosphorus	ppm	ASTM D5185m	1150	<b>695</b>	605	973
Zinc	ppm	ASTM D5185m	1350	<b>838</b>	846	1100
Sulfur	ppm	ASTM D5185m	4250	<b>2538</b>	2618	3374
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>23.9</b>	23.1	18.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.2</b>	7.3	5.9
Visc @ 100°C	cSt	ASTM D445	10.9	<b>11.5</b>	11.0	12.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DJJ0021708 **Received** : 14 Feb 2024  
**Lab Number** : 06088611 **Tested** : 15 Feb 2024  
**Unique Number** : 10876056 **Diagnosed** : 15 Feb 2024 - Wes Davis  
**Test Package** : MOBCE ( Additional Tests: TBN )

**RIVER METALS RECYCLING - LOUISVILLE**  
 PO BOX 6521  
 LOUISVILLE, KY  
 US 40206  
 Contact: RYAN BOWDEN

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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