



# OIL ANALYSIS REPORT

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

Area  
**BOLINGBROOK**  
Machine Id  
**LIEBHERR LTM1220 AT4864 (S/N 94864)**  
Component  
**Diesel Engine**  
Fluid  
**HPL 10W40 (--- GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>HPL0002780</b>	HPL0002122	HPL0001456
Sample Date		Client Info		<b>05 May 2023</b>	30 Sep 2022	26 May 2022
Machine Age	hrs	Client Info		<b>5725</b>	2858	27348
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>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>5</b>	18	11
Chromium	ppm	ASTM D5185m	>5	<b>0</b>	1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>6</b>	4	3
Lead	ppm	ASTM D5185m	>30	<b>3</b>	2	5
Copper	ppm	ASTM D5185m	>125	<b>47</b>	5	22
Tin	ppm	ASTM D5185m	>5	<b>0</b>	2	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

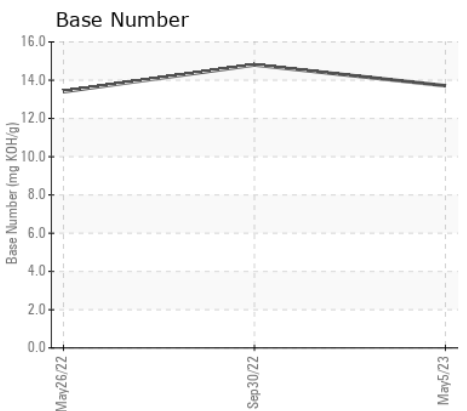
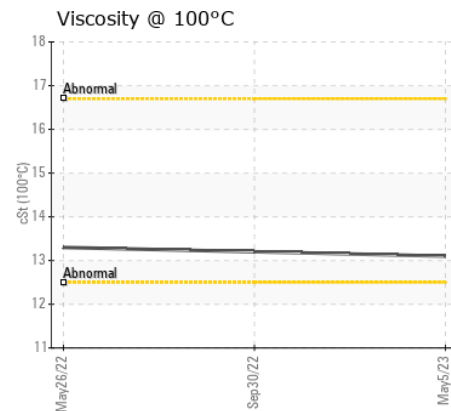
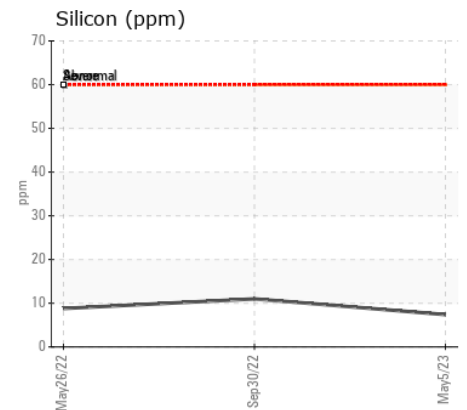
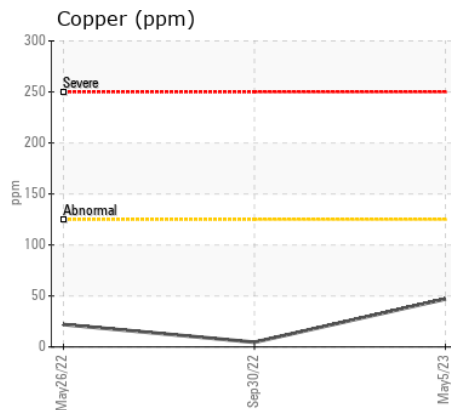
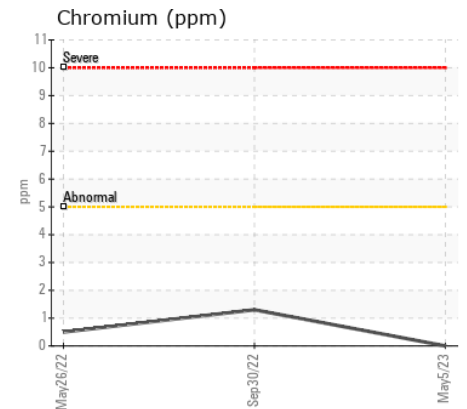
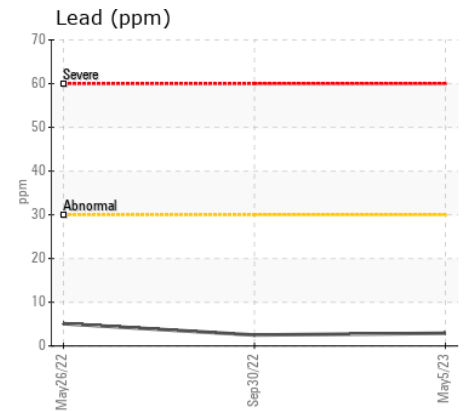
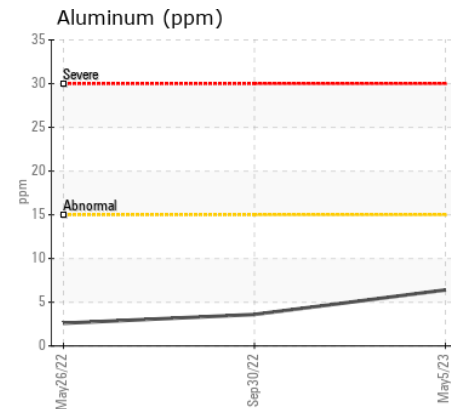
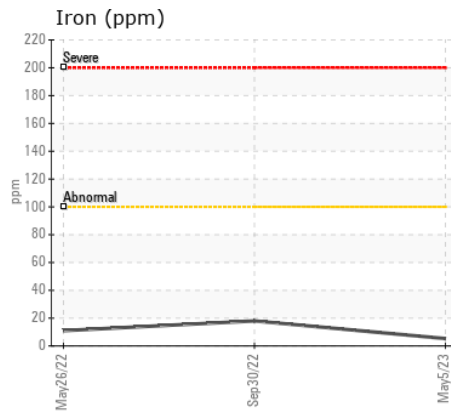
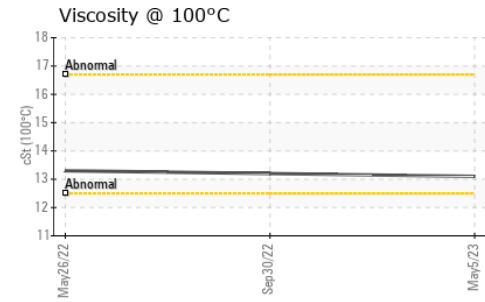
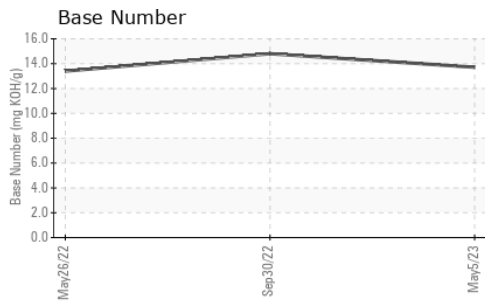
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>7</b>	11	9
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	2
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>	0.4	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.5</b>	10.5	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>34.2</b>	32.5	30.2
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>3</b>	0	<1
Boron	ppm	ASTM D5185m		<b>23</b>	209	218
Barium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Molybdenum	ppm	ASTM D5185m		<b>595</b>	730	672
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>977</b>	490	443
Calcium	ppm	ASTM D5185m		<b>2826</b>	4368	3912
Phosphorus	ppm	ASTM D5185m		<b>1079</b>	883	829
Zinc	ppm	ASTM D5185m		<b>1290</b>	1053	1060
Sulfur	ppm	ASTM D5185m		<b>10863</b>	20758	16727
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>37.5</b>	20.5	21.1
Base Number (BN)	mg KOH/g	ASTM D2896		<b>13.71</b>	14.8	13.4
Visc @ 100°C	cSt	ASTM D445		<b>13.1</b>	13.2	13.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : HPL0002780 **Received** : 09 May 2023  
**Lab Number** : 05842304 **Tested** : 10 May 2023  
**Unique Number** : 10466411 **Diagnosed** : 11 May 2023 - Doug Bogart  
**Test Package** : MOB 2

**STEVENSON CRANE**  
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 US 60440

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F:

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)