

## WEAR ABNORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL



## LIEBHERR L586 068511-1761

Front Differential

GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

W	E,	4	R

Tin ppm levels are abnormal. An increase in the copper level is noted. Thrust washer and/or bearing/bushing wear is indicated.

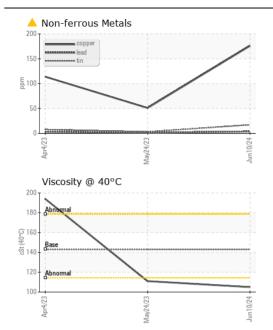
## CONTAMINATION

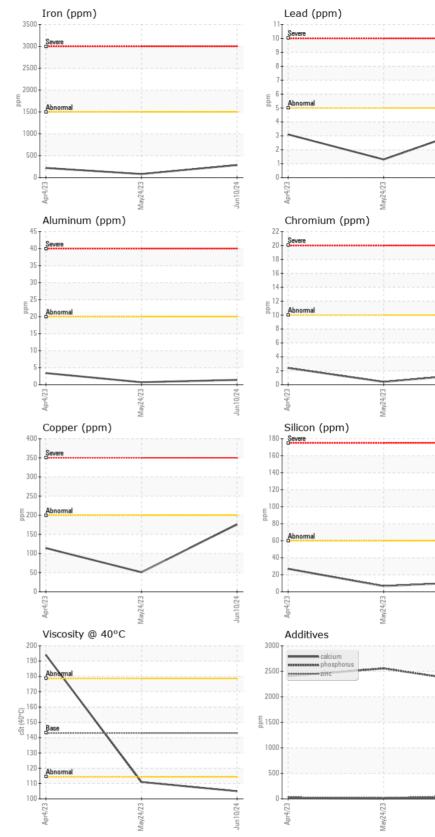
There is no indication of any contamination in the oil.

## FLUID CONDITION

Viscosity of sample indicates oil is within SAE 75W90 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

	Test	UOM	Method	Limit/Abn	Current	History1	History2
	Sample Number		Client Info		LH0291011	LH0261349	LH0256857
	Sample Date		Client Info		10 Jun 2024	24 May 2023	04 Apr 2023
	Machine Age	hrs	Client Info		3246	1041	700
	Oil Age	hrs	Client Info		0	0	0
	Filter Age	hrs	Client Info		0	0	0
	Oil Changed		Client Info		Changed	Changed	Changed
	Filter Changed		Client Info		N/A	N/A	N/A
	Sample Status		ABNORMAL	NORMAL	NORMAL		
				. 1500	286	81	219
	Iron Chromium	ppm	ASTM D5185(m) ASTM D5185(m)	>1500 >10	200	<1	219
	Nickel	ppm			_		2
	Titanium	ppm	ASTM D5185(m)	>4	<1	<1	_
	Silver	ppm	ASTM D5185(m)	>5	0	0	<1 0
	Aluminum	ppm	ASTM D5185(m)	>20	0		3
	Lead	ppm	ASTM D5185(m) ASTM D5185(m)	>20 >5	4	<1	3
		ppm	( )	>200	4	51	114
	Copper Tin	ppm	ASTM D5185(m)		170	3	8
	Vanadium	ppm	ASTM D5185(m) ASTM D5185(m)	>10	0	0	o <1
	White Metal	ppm scalar	Visual*	NONE	VLITE	LIGHT	< I VLITE
	Yellow Metal		Visual*	NONE	NONE	NONE	NONE
-		scalar	visuai	NONE		NONE	NONE
	Silicon	ppm	ASTM D5185(m)	>60	12	7	27
	Potassium	ppm	ASTM D5185(m)	>20	1	<1	0
	Water		WC Method	>.2	NEG	NEG	NEG
	Silt	scalar	Visual*	NONE	VLITE	NONE	NONE
	Debris	scalar	Viouel*				
	Sand/Dirt		Visual*	NONE	NONE	NONE	NONE
	Sand/Din	scalar	Visual*	NONE NONE	NONE NONE	NONE VLITE	NONE
	Appearance	scalar scalar			-		
			Visual*	NONE	NONE	VLITE	NONE
	Appearance	scalar	Visual* Visual*	NONE NORML	NONE NORML	VLITE	NONE
	Appearance Odor Emulsified Water	scalar scalar scalar	Visual* Visual* Visual* Visual*	NORML NORML >.2	NONE NORML NORML NEG	VLITE NORML NORML NEG	NONE NORML NORML NEG
	Appearance Odor Emulsified Water Sodium	scalar scalar scalar ppm	Visual* Visual* Visual* Visual* ASTM D5185(m)	NORML NORML >.2 >170	NONE NORML NORML NEG 5	VLITE NORML NORML NEG 3	NONE NORML NORML NEG 9
	Appearance Odor Emulsified Water Sodium Boron	scalar scalar scalar ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m)	NORML NORML >.2 >170 400	NONE NORML NORML NEG 5 208	VLITE NORML NORML NEG 3 232	NONE NORML NORML NEG 9 3
	Appearance Odor Emulsified Water Sodium Boron Barium	scalar scalar scalar ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML >.2 >170 400 200	NONE NORML NORML NEG 5 208 <1	VLITE NORML NORML NEG 3 232 0	NONE NORML NEG 9 3 0
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	scalar scalar scalar ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NORML NORML >.2 >170 400	NONE NORML NORML NEG 5 208 <1 0	VLITE NORML NORML NEG 3 232 0 0	NONE NORML NEG 9 3 0 <1
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	scalar scalar scalar ppm ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML NORML >.2 >170 400 200 12	NONE NORML NEG 5 208 <1 0 18	VLITE NORML NEG 3 232 0 0 12	NONE   NORML   NORML   NEG   9   3   0   <1   61
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	scalar scalar ppm ppm ppm ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML NORML >.2 >170 400 200 12 12	NONE NORML NORML NEG 5 208 <1 0 18 2	VLITE NORML NORML NEG 3 232 0 0 0 12 2	NONE   NORML   NORML   NEG   9   3   0   <1   61   4
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	scalar scalar ppm ppm ppm ppm ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML >.2 >170 400 200 12 12 12	NONE NORML NEG 5 208 <1 0 18 2 8	VLITE NORML NORML 3 232 0 0 12 2 2 6	NONE NORML NEG 9 3 0 <1 61 61 4 13
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	scalar scalar ppm ppm ppm ppm ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML NORML >.2 >170 400 200 12 12 12 12 12 150 1650	NONE NORML NEG 5 208 <1 0 18 2 8 2270	VLITE NORML NEG 3 232 0 0 12 2 2 6 2557	NONE   NORML   NORML   NEG   9   3   0   <1   61   4
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML NORML >.2 >170 400 200 12 12 12 12 150 1650 125	NONE NORML NEG 5 208 <1 0 18 2 8 2270 65	VLITE NORML NORML NEG 3 232 0 0 0 12 2 2 6 2557 20	NONE NORML NEG 9 3 0 <1 61 61 4 13 2406 34
	Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	scalar scalar ppm ppm ppm ppm ppm ppm ppm	Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	NONE NORML NORML >.2 >170 400 200 12 12 12 12 12 150 1650	NONE NORML NEG 5 208 <1 0 18 2 8 2270	VLITE NORML NEG 3 232 0 0 12 2 2 6 2557	NONE NORML NEG 9 3 0 <1 61 4 13 2406







Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 CALA Sample No. Received : LH0291011 : 11 Jun 2024 Lab Number : 02641230 Tested : 11 Jun 2024 ISO 17025:2017 Accredited Laboratory Diagnosed Unique Number : 5798769 : 12 Jun 2024 - Kevin Marson Test Package : MOB 1 To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

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