

# **OIL ANALYSIS REPORT**

Sample Rating Trend





### Machine Id LIEBHERR LR 1600/2 CR-6604 (S/N 074564) Component Pump Drive

{not provided} (--- GAL)

## Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

#### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

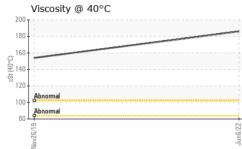
#### **Fluid Condition**

The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0704301	WC0360264	
Sample Date		Client Info		06 Jun 2022	26 Nov 2019	
Machine Age	hrs	Client Info		12791	11538	
Oil Age	hrs	Client Info		0	0	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	٧	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	53	16	
Chromium	ppm	ASTM D5185m	>15	<1	<1	
Nickel	ppm	ASTM D5185m		0	<1	
Titanium	ppm	ASTM D5185m		<1	0	
Silver	ppm	ASTM D5185m		<1	0	
Aluminum	ppm	ASTM D5185m	>20	8	2	
Lead	ppm	ASTM D5185m		0	0	
Copper	ppm	ASTM D5185m	>35	2	1	
Tin	ppm	ASTM D5185m	>4	0	<1	
Antimony	ppm	ASTM D5185m			<1	
Vanadium	ppm	ASTM D5185m		0	<1	
Cadmium	ppm	ASTM D5185m		0	0	
	ррш					
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		42	11	
	1. 1			76		
Barium	ppm	ASTM D5185m		0	0	
Barium Molybdenum		ASTM D5185m ASTM D5185m				
	ppm	ASTM D5185m		0	0	
Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 <1	0 0	
Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 <1	0 0 <1	
Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 <1 3	0 0 <1 2	
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 <1 3 35	0 0 <1 2 38	
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 <1 3 35 308	0 0 <1 2 38 413	
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1 3 35 308 27	0 0 <1 2 38 413 49	  
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 <1 <1 3 35 308 27 6059	0 0 <1 2 38 413 49 793	   
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 <1 <1 3 35 308 27 6059 current	0 0 <1 2 38 413 49 793 history1	    history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m		0 <1 <1 3 35 308 27 6059 current 9	0 0 <1 2 38 413 49 793 history1 35	    history2 
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	>75	0 <1 <1 3 35 308 27 6059 current 9 1	0 0 <1 2 38 413 49 793 history1 35 <1	    history2 
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>75 >20	0 <1 <1 3 35 308 27 6059 current 9 1 4	0 0 <1 2 38 413 49 793 history1 35 <1 2	    history2  
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>75 >20 limit/base	0 <1 <1 3 35 308 27 6059 current 9 1 4 current	0 0 <1 2 38 413 49 793 history1 35 <1 2	    history2    history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>75 >20 limit/base NONE	0 <1 <1 3 35 308 27 6059 current 9 1 4 current NONE	0 0 <1 2 38 413 49 793 history1 35 <1 2 history1 LIGHT	    history2   history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	>75 >20 limit/base NONE NONE	0 <1 <1 3 35 308 27 6059 current 9 1 4 current NONE NONE	0 0 <1 2 38 413 49 793 history1 35 <1 2 history1 2 LIGHT NONE	    history2  history2  history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yisual	>75 >20 limit/base NONE NONE NONE	0 <1 <1 3 35 308 27 6059 <u>current</u> 9 1 4 <u>current</u> 4 <u>NONE</u> NONE NONE	0 0 <1 2 38 413 49 793 history1 35 <1 2 history1 2 LIGHT NONE NONE	    history2   history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yuisual *Visual *Visual	>75 >20 limit/base NONE NONE NONE NONE	0 <1 <1 3 35 308 27 6059 current 9 1 4 current 4 VONE NONE NONE NONE NONE	0 0 ( -1 2 38 413 49 793 <u>history1</u> 35 -1 2 <u>history1</u> LIGHT NONE NONE NONE NONE	    history2  history2  history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yuisual *Visual *Visual *Visual *Visual	>75 >20 limit/base NONE NONE NONE NONE NONE	0 <1 <1 3 35 308 27 6059 <u>current</u> 9 1 4 <u>9</u> 1 4 <u>vurrent</u> NONE NONE NONE NONE NONE	0 0 ( -1 2 38 413 49 793 <u>history1</u> 35 <1 2 <u>history1</u> LIGHT NONE NONE NONE NONE NONE	    history2   history2  history2  
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 Iimit/base NONE NONE NONE NONE NONE	0 <1 <1 3 35 308 27 6059 current 9 1 4 9 1 4 VONE NONE NONE NONE NONE NONE NONE NONE	0 0 30 41 38 413 49 793 history1 35 <1 2 history1 LIGHT NONE NONE NONE NONE NONE NONE NONE NON	history2 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D	>75 20 imit/base NONE NONE NONE NONE NONE NONE NONE NON	0 <1 <1 3 35 308 27 6059 current 9 1 4 vorrent 4 vone NONE NONE NONE NONE NONE NONE NONE NON	0 0 ( <1 2 38 413 49 793 history1 35 <1 2 history1 LIGHT LIGHT LIGHT NONE NONE NONE NONE NONE NONE NONE NON	history2 history2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	>75 >20 Imit/base NONE NONE NONE NONE NONE NONE NONE NON	0 <1 <1 3 35 308 27 6059 current 9 1 4 vorrent 4 vorrent 4 vone NONE NONE NONE NONE NONE NONE NONE NON	0 0 30 38 413 49 793 history1 35 <1 2 history1 2 LIGHT NONE NONE NONE NONE NONE NONE NONE NON	history2 history2



# **OIL ANALYSIS REPORT**



FLUI	D PROPERT	IES	method	limit/base	current	history1	history2
Visc @	9 40°C	cSt	ASTM D44	5	186	154	
SAM	PLE IMAGES	\$	method	limit/base	current	history1	history2
Color					no image	no image	no image
Pottom					no imogo	no imago	no imogo
Bottom	I				no image	no image	no image
GRA	PHS						
Ferro	ous Alloys						
50 -	iron			/			
45	chromium nickel						
35 -							
ي <sup>30</sup> 25 -							
20 15							
10							
5							
Nov26/19				Jun6/22			
				۳۲			
10 T	ferrous Metal	5					
9 -	copper lead						
7-							
6- 8-5-							
e s							
3							
2							
0 <b>L</b>				22			
Nov26/19				Jun6/22			
Visco	sity @ 40°C						
190							
170-							
160							
() 00 tg 130 -							
ස් 130							
110 Abnom	nal						
90 - Abnom							
80				22			
Nov26/19				Jun6/22			
	eck USA - 501						R HEAVY LI
: WC0704 : 0556748		Recei Teste		13 Jun 2022 14 Jun 2022		473	32 NC 54 EAS GRAHAM, N
r :1001188				15 Jun 2022 - Ang	ela Borella		JS 27253-92 <sup>-</sup>
: CONST						Contact: MICH nichaell@buckner	HAEL LAWSO

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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