



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR HS8100 189920
Component
Hydraulic System
Fluid
LIEBHERR HYDRAULIC HVI (--- GAL)

RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as LIEBHERR HYDRAULIC HVI, however, a fluid match indicates that this fluid is ISO 32 AW Hydraulic Oil. Please confirm the oil type and grade on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0289641	---	---
Sample Date		Client Info		17 Mar 2024	---	---
Machine Age	hrs	Client Info		16088	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Not Changd	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>30	10	---	---
Chromium	ppm	ASTM D5185(m)	>10	0	---	---
Nickel	ppm	ASTM D5185(m)	>10	0	---	---
Titanium	ppm	ASTM D5185(m)		<1	---	---
Silver	ppm	ASTM D5185(m)		0	---	---
Aluminum	ppm	ASTM D5185(m)	>4	0	---	---
Lead	ppm	ASTM D5185(m)	>22	0	---	---
Copper	ppm	ASTM D5185(m)	>35	3	---	---
Tin	ppm	ASTM D5185(m)	>4	0	---	---
Vanadium	ppm	ASTM D5185(m)		0	---	---
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

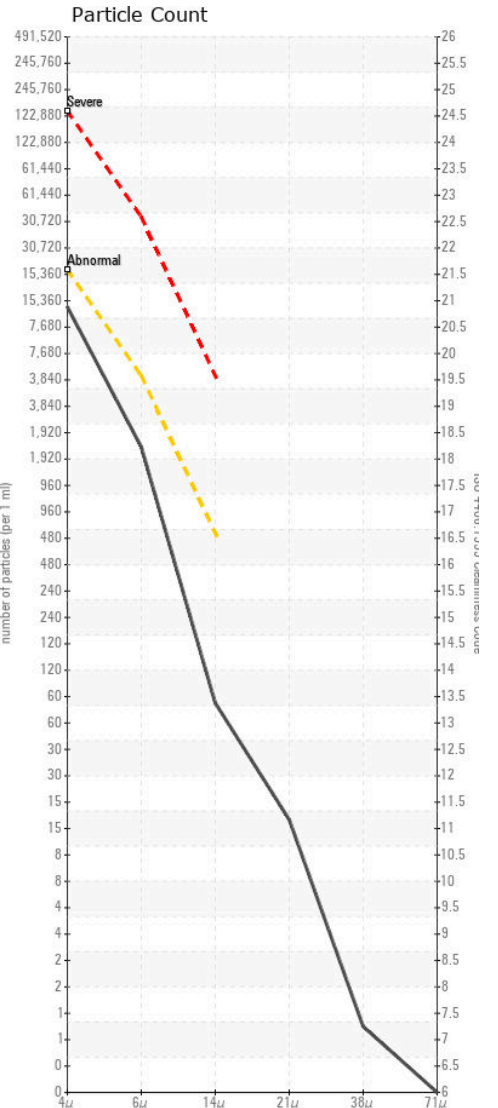
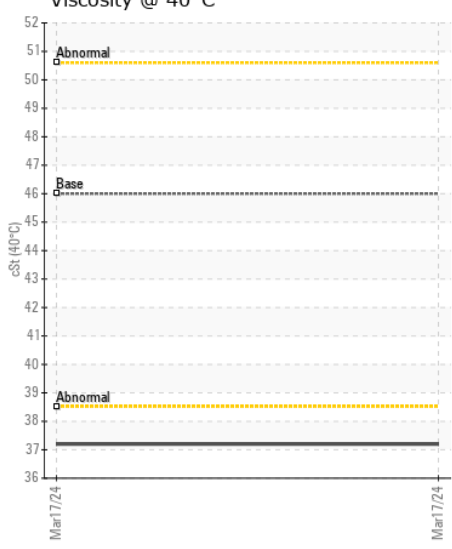
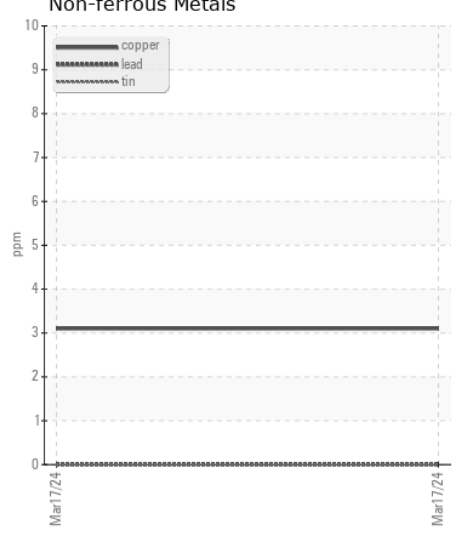
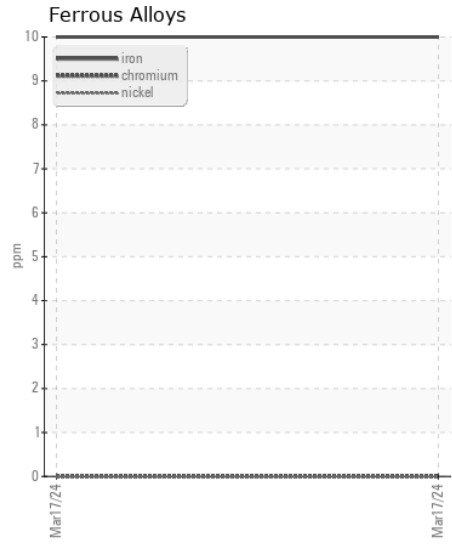
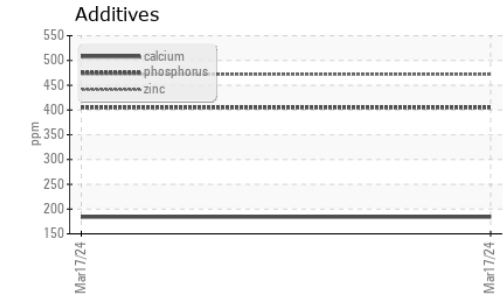
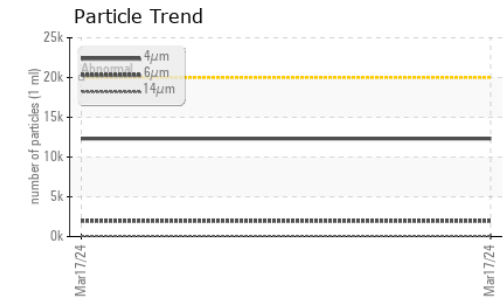
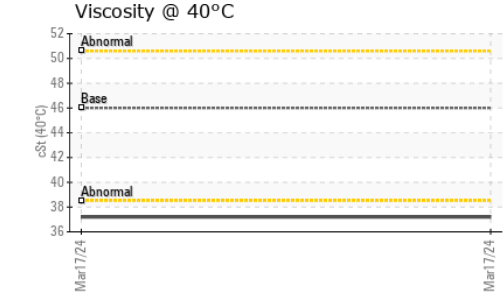
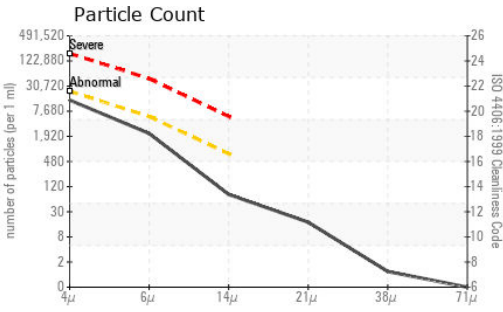
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185(m)	>15	<1	---	---
Potassium	ppm	ASTM D5185(m)	>20	<1	---	---
Water		WC Method	>0.1	NEG	---	---
Particles >4µm		ASTM D7647	>20000	12311	---	---
Particles >6µm		ASTM D7647	>5000	1968	---	---
Particles >14µm		ASTM D7647	>640	69	---	---
Particles >21µm		ASTM D7647	>160	15	---	---
Particles >38µm		ASTM D7647	>40	1	---	---
Particles >71µm		ASTM D7647	>10	0	---	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	21/18/13	---	---
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	VLITE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.1	NEG	---	---

FLUID CONDITION

Viscosity of sample indicates oil is within ISO 32 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		2	---	---
Boron	ppm	ASTM D5185(m)	0	5	---	---
Barium	ppm	ASTM D5185(m)	0	0	---	---
Molybdenum	ppm	ASTM D5185(m)	0	<1	---	---
Manganese	ppm	ASTM D5185(m)	<1	0	---	---
Magnesium	ppm	ASTM D5185(m)	7	38	---	---
Calcium	ppm	ASTM D5185(m)	1317	184	---	---
Phosphorus	ppm	ASTM D5185(m)	611	405	---	---
Zinc	ppm	ASTM D5185(m)	696	472	---	---
Sulfur	ppm	ASTM D5185(m)	2574	1783	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	46	37.2	---	---



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0289641 **Received** : 29 May 2024
Lab Number : 02638523 **Tested** : 31 May 2024
Unique Number : 5787685 **Diagnosed** : 31 May 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PrtCount)

HIGGS & HIGGS
 RR # 4
 ST THOMAS, ON
 CA N5P 3S8
 Contact: Bernie Higgs

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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