



LIEBHERR

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LV20F 110816 - HAMMER

Component
Gearbox

Fluid
LIEBHERR GEAR PG 220 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0273739	---	---
Sample Date		Client Info		08 Feb 2024	---	---
Machine Age	hrs	Client Info		150	---	---
Oil Age	hrs	Client Info		150	---	---
Filter Age	hrs	Client Info		150	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				SEVERE	---	---

WEAR

The iron level is severe. Gear wear is indicated.

Iron	ppm	ASTM D5185m	>200	437	---	---
Chromium	ppm	ASTM D5185m	>10	4	---	---
Nickel	ppm	ASTM D5185m	>10	2	---	---
Titanium	ppm	ASTM D5185m		0	---	---
Silver	ppm	ASTM D5185m		0	---	---
Aluminum	ppm	ASTM D5185m	>25	1	---	---
Lead	ppm	ASTM D5185m	>50	<1	---	---
Copper	ppm	ASTM D5185m	>200	11	---	---
Tin	ppm	ASTM D5185m	>10	0	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	MODER	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	4	---	---
Potassium	ppm	ASTM D5185m	>20	<1	---	---
Water		WC Method	>0.2	NEG	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185m		<1	---	---
Boron	ppm	ASTM D5185m		22	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		0	---	---
Manganese	ppm	ASTM D5185m		6	---	---
Magnesium	ppm	ASTM D5185m		<1	---	---
Calcium	ppm	ASTM D5185m		34	---	---
Phosphorus	ppm	ASTM D5185m		427	---	---
Zinc	ppm	ASTM D5185m		36	---	---
Sulfur	ppm	ASTM D5185m		5948	---	---
Visc @ 40°C	cSt	ASTM D445	228	246	---	---

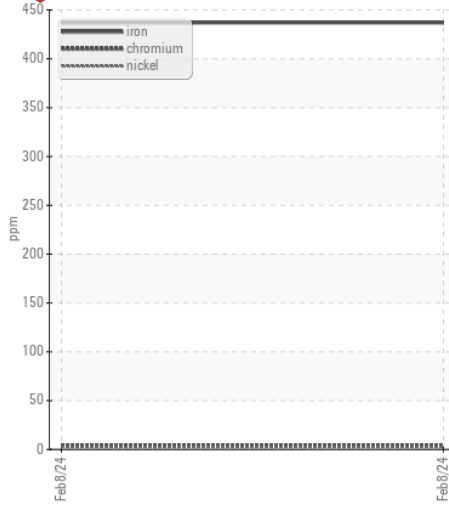
Ferrous Alloys



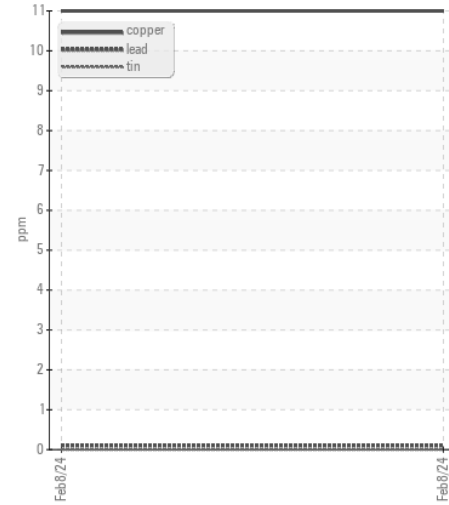
Viscosity @ 40°C



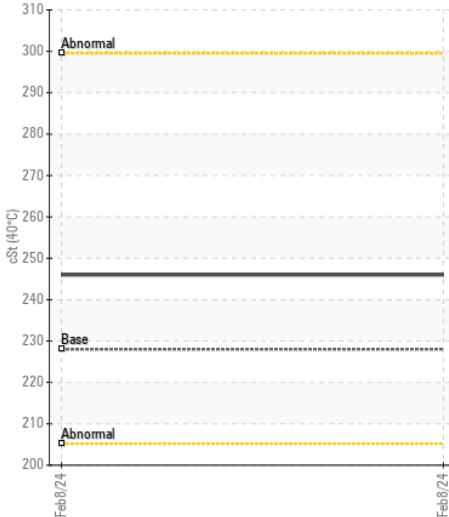
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0273739
Lab Number : 06088377
Unique Number : 10875822
Test Package : CONST

Received : 13 Feb 2024
Tested : 14 Feb 2024
Diagnosed : 15 Feb 2024 - Sean Felton

PETERSON CONTRACTORS INC
 PO BOX A
 REINBECK, IA
 US 50669
 Contact: WADE VANHAVEN
 MBERWALD@PCIUS.COM

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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F: