



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LR 1600/2 CR 6606 (S/N 074 509)

Component
Hydraulic System

Fluid
ATF (--- QTS)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0873444	WCMCF49630	WCMCF26417
Sample Date		Client Info		05 Feb 2024	21 Sep 2018	18 Jun 2018
Machine Age	hrs	Client Info		17237	12407	11982
Oil Age	hrs	Client Info		0	1000	0
Filter Age	hrs	Client Info		0	1000	0
Oil Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Filter Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Moderate concentration of visible metal present. All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	2	2	2
Chromium	ppm	ASTM D5185m	>10	0	0	<1
Nickel	ppm	ASTM D5185m	>10	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	0	<1	<1
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	5	23	21
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	▲ MODER	NONE	NONE

CONTAMINATION

There is a light concentration of water present in the oil. High concentration of visible dirt/debris present in the oil. Elemental level of silicon (Si) above normal.

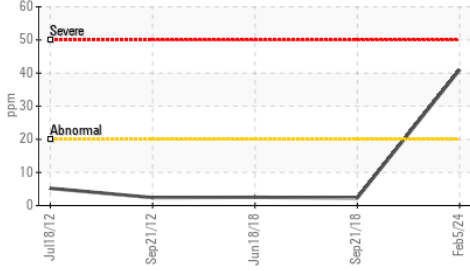
Silicon	ppm	ASTM D5185m	>20	▲ 41	2	2
Potassium	ppm	ASTM D5185m	>20	0	0	0
Water	%	ASTM D6304	>0.1	▲ 0.168	---	---
ppm Water	ppm	ASTM D6304	>1000	▲ 1680	---	---
Particles >4µm		ASTM D7647	>5000	---	13287	24628
Particles >6µm		ASTM D7647	>1300	---	422	587
Particles >14µm		ASTM D7647	>160	---	25	44
Particles >21µm		ASTM D7647	>40	---	7	14
Particles >38µm		ASTM D7647	>10	---	0	0
Particles >71µm		ASTM D7647	>3	---	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	---	21/16/12	22/16/13
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ HEAVY	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	0.2%	NEG	NEG

FLUID CONDITION

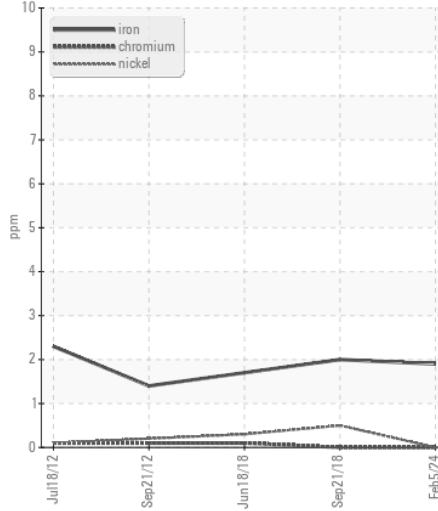
The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m		2	2	3
Boron	ppm	ASTM D5185m		64	74	74
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	0	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		3	6	5
Calcium	ppm	ASTM D5185m		78	179	180
Phosphorus	ppm	ASTM D5185m		183	258	244
Zinc	ppm	ASTM D5185m		33	95	92
Sulfur	ppm	ASTM D5185m		865	1023	1109
Acid Number (AN)	mg KOH/g	ASTM D8045		0.68	0.602	0.648
Visc @ 40°C	cSt	ASTM D445	35.0	28.3	28.62	28.1

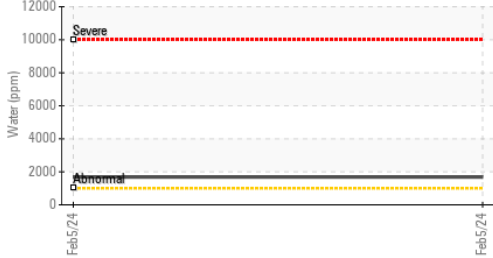
▲ Silicon (ppm)



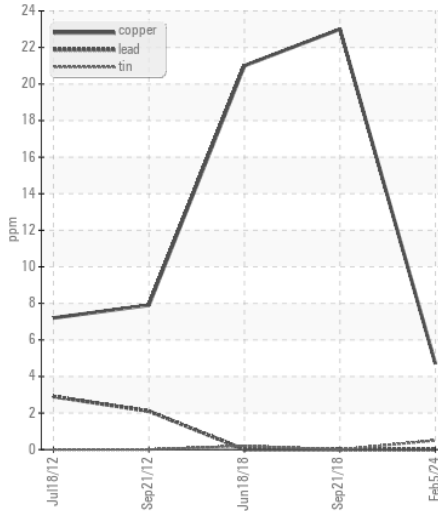
Ferrous Alloys



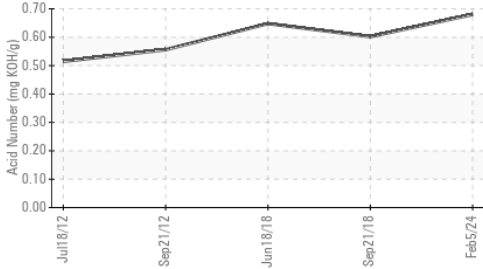
▲ Water (KF)



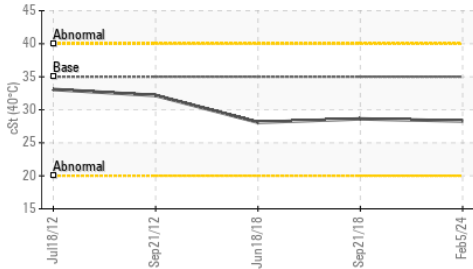
Non-ferrous Metals



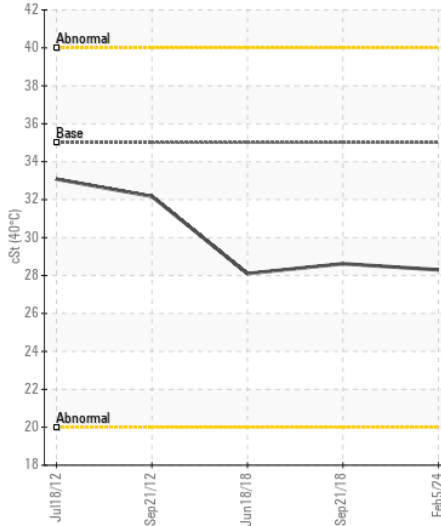
Acid Number



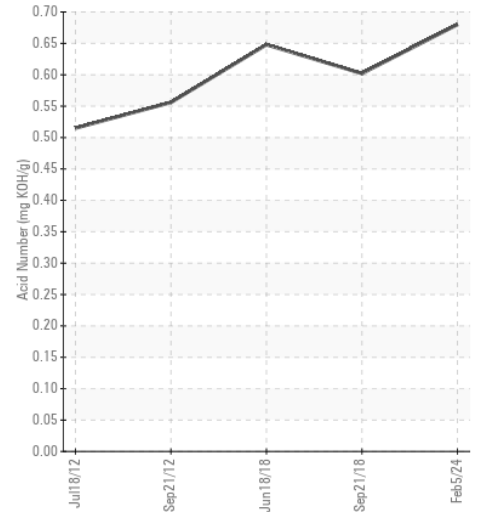
Viscosity @ 40°C



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0873444 **Received** : 08 Feb 2024
Lab Number : 06083573 **Tested** : 10 Feb 2024
Unique Number : 10871018 **Diagnosed** : 10 Feb 2024 - Don Baldrige
Test Package : CONST (Additional Tests: KF)

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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