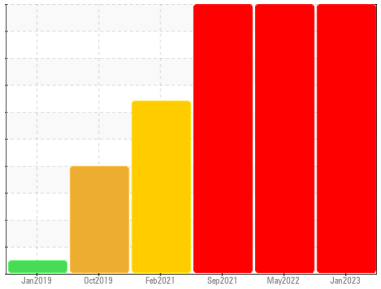
PROBLEM SUMMARY

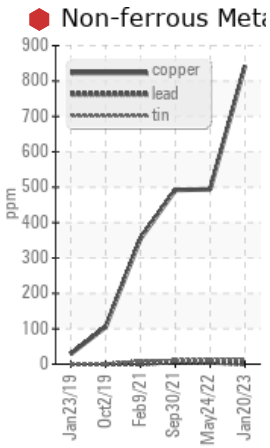
Area
TMR-Tampa Berth
Machine Id
LIEBHERR LH80C 1529-107532
Component
Swing Drive
Fluid
LIEBHERR GEAR BASIC 90 LS (15 LTR)

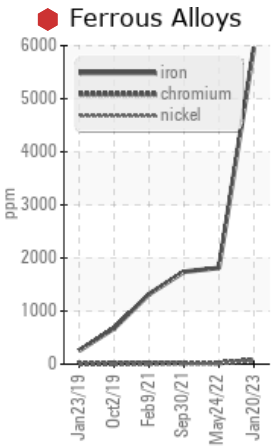
Sample Rating Trend

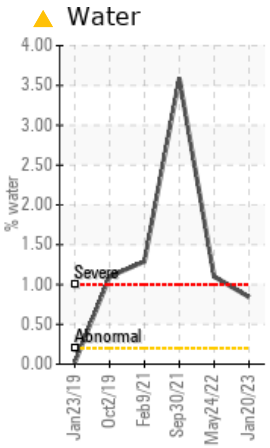


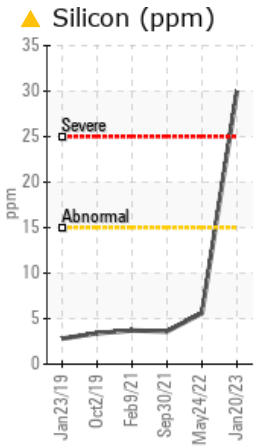
WEAR

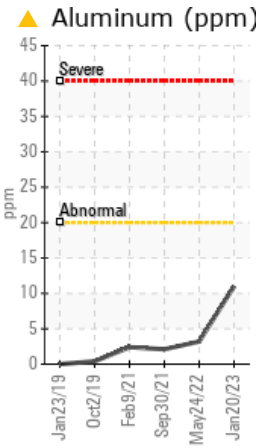
COMPONENT CONDITION SUMMARY











RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We advise that you check for the source of water entry. The oil 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.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>750	**5962**	1814	1740
Chromium	ppm	ASTM D5185m	>10	**81**	20	22
Nickel	ppm	ASTM D5185m	>5	**58**	9	8
Aluminum	ppm	ASTM D5185m	>20	**11**	3	2
Copper	ppm	ASTM D5185m	>250	**843**	494	492
Tin	ppm	ASTM D5185m	>10	**14**	12	11
Silicon	ppm	ASTM D5185m	>15	**30**	6	4
Water	%	ASTM D6304	>0.2	**0.843**	1.10	3.59
ppm Water	ppm	ASTM D6304	>2000	**8430**	11000	35900
Emulsified Water	scalar	*Visual	>0.2	**0.2%**	0.2%	0.2%

Customer Id: TRATAM3310
Sample No.: DJJ0008200
Lab Number: 05761001
Test Package: MOBCE

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check all areas where dirt can enter the system.
Check Water Access	---	---	?	We advise that you check for the source of water entry.

HISTORICAL DIAGNOSIS

24 May 2022 Diag: Don Baldridge

WEAR

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.Gear wear is indicated. Bearing and/or bushing wear is indicated. There is a high concentration of water present in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

30 Sep 2021 Diag: Jonathan Hester

WEAR

We advise that you check for the source of water entry. The oil 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.Bearing and/or gear wear is indicated. There is a high concentration of water present in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

09 Feb 2021 Diag: Don Baldridge

WATER

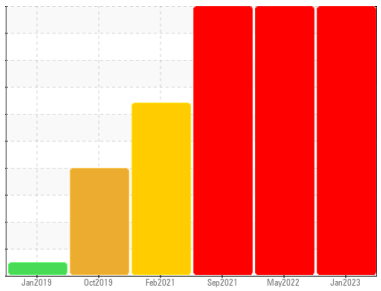
We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.Bearing and/or gear wear is indicated. There is a high concentration of water present in the oil. Confirm oil type. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Area
TMR-Tampa Berth
Machine Id
LIEBHERR LH80C 1529-107532
Component
Swing Drive
Fluid
LIEBHERR GEAR BASIC 90 LS (15 LTR)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
We advise that you check all areas where dirt can enter the system. We advise that you check for the source of water entry. The oil 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.

Wear
Gear wear is indicated. Bearing and/or bushing wear is indicated.

Contamination
There is a moderate concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**DJJ0008200**	DJJ0008294	DJJ0007907
Sample Date		Client Info		**20 Jan 2023**	24 May 2022	30 Sep 2021
Machine Age	hrs	Client Info		**0**	0	4976
Oil Age	hrs	Client Info		**2000**	0	1000
Oil Changed		Client Info		**Changed**	N/A	Changed
Sample Status				**SEVERE**	SEVERE	SEVERE

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>750	**5962**	1814	1740
Chromium	ppm	ASTM D5185m	>10	**81**	20	22
Nickel	ppm	ASTM D5185m	>5	**58**	9	8
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m		**0**	<1	1
Aluminum	ppm	ASTM D5185m	>20	**11**	3	2
Lead	ppm	ASTM D5185m	>5	**0**	5	8
Copper	ppm	ASTM D5185m	>250	**843**	494	492
Tin	ppm	ASTM D5185m	>10	**14**	12	11
Antimony	ppm	ASTM D5185m	>5	**---**	---	0
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	1

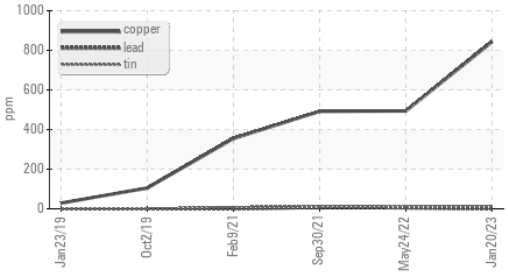
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	**9**	8	13
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	0	**11**	2	3
Manganese	ppm	ASTM D5185m	0	**41**	11	11
Magnesium	ppm	ASTM D5185m	<1	**1**	3	2
Calcium	ppm	ASTM D5185m	<1	**15**	18	13
Phosphorus	ppm	ASTM D5185m	2143	**2150**	2035	2214
Zinc	ppm	ASTM D5185m	<1	**30**	28	21
Sulfur	ppm	ASTM D5185m	23468	**24155**	25056	24300

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>15	**30**	6	4
Sodium	ppm	ASTM D5185m		**2**	2	<1
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0
Water	%	ASTM D6304	>0.2	**0.843**	1.10	3.59
ppm Water	ppm	ASTM D6304	>2000	**8430**	11000	35900

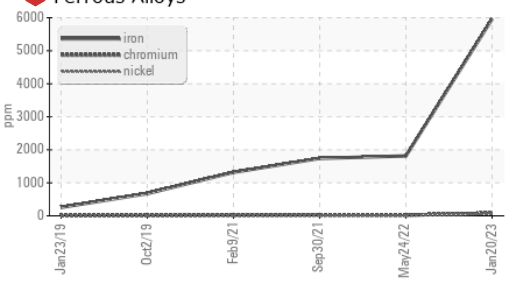
VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	LIGHT	MODER
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**0.2%**	0.2%	0.2%
Free Water	scalar	*Visual		**NEG**	NEG	NEG

OIL ANALYSIS REPORT

Non-ferrous Metals



Ferrous Alloys

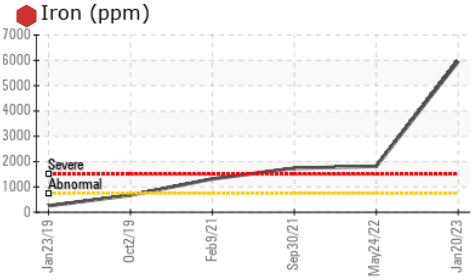


FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D445	170	**254**	281	278

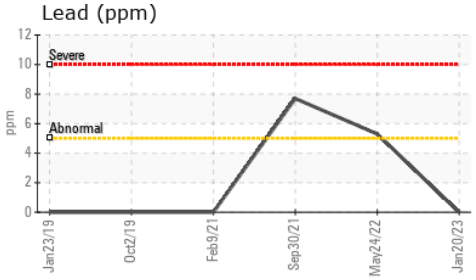
SAMPLE IMAGES	method	limit/base	current	history 1	history 2
Color			*no image*	*no image*	*no image*
Bottom			*no image*	*no image*	*no image*

GRAPHS

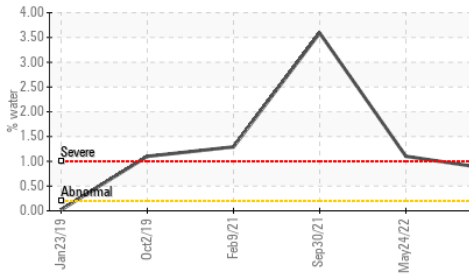
Iron (ppm)



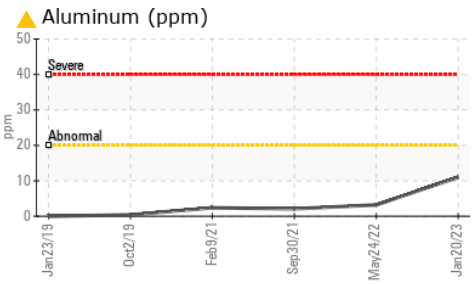
Lead (ppm)



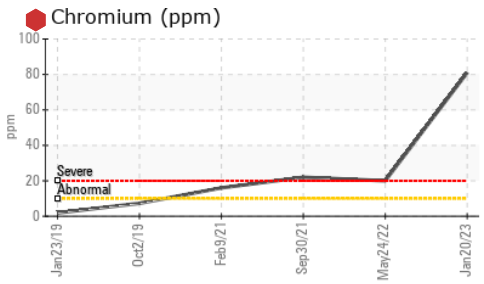
Water



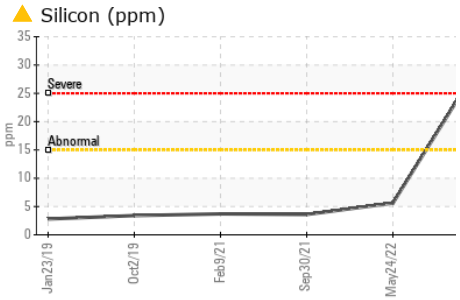
Aluminum (ppm)



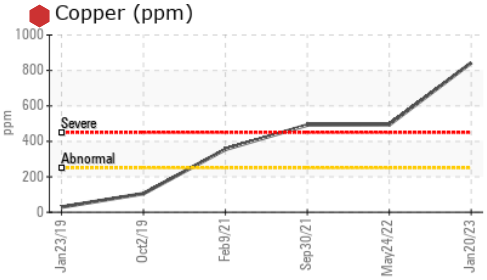
Chromium (ppm)



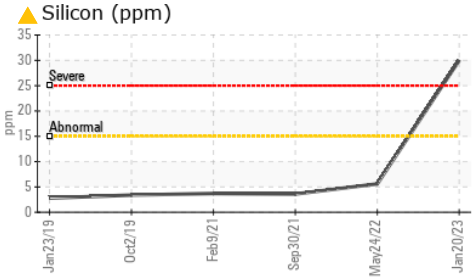
Silicon (ppm)



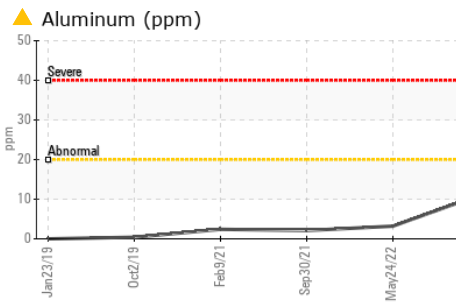
Copper (ppm)



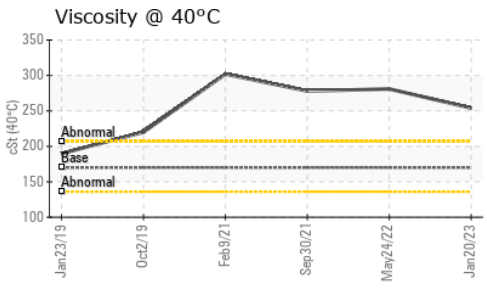
Silicon (ppm)



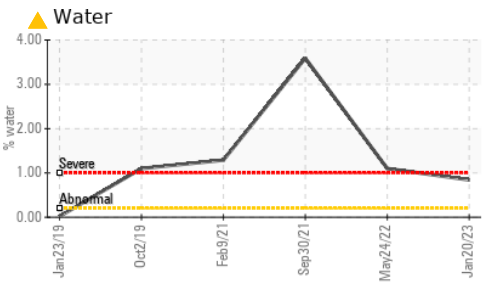
Aluminum (ppm)



Viscosity @ 40°C



Water



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0008200
Lab Number : 05761001
Unique Number : 10325608
Test Package : MOBCE (Additional Tests: KF)

Received : 07 Feb 2023
Diagnosed : 08 Feb 2023
Diagnostician : Don Baldridge

TRADEMARK METALS RECYCLING - TAMPA BERTH
3310 PORT SUTTON RD
TAMPA, FL
US 33619
Contact: RYAN BOWDEN

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)

T:
F: