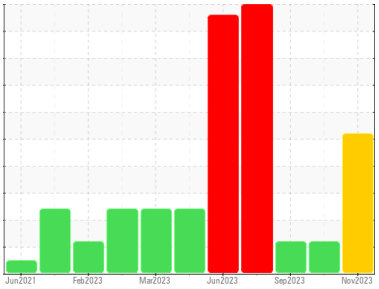
PROBLEM SUMMARY

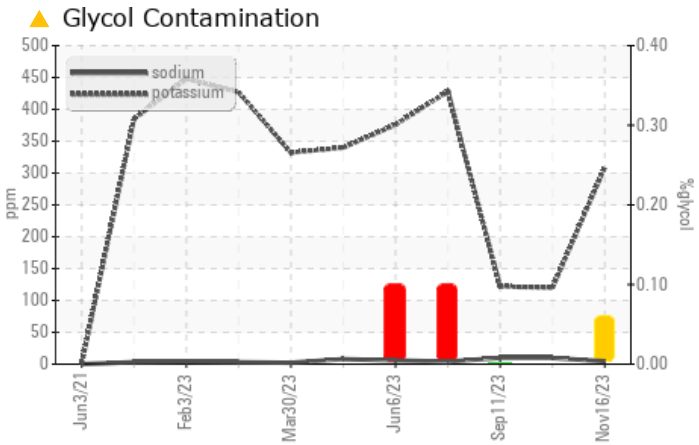
Machine Id
LIEBHERR LH50M 120556-1216
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

Sample Rating Trend



GLYCOL

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ATTENTION	ATTENTION
Potassium	ppm	ASTM D5185m	>20	**309**	120	122
Glycol	%	*ASTM D2982		**0.06**	NEG	0.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**3.2**	10.2	11.3
Debris	scalar	*Visual	NONE	**MODER**	NONE	NONE

Customer Id: RIVTRI
Sample No.: DJJ0022510
Lab Number: 06013857
Test Package: CONST

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

11 Oct 2023 Diag: Jonathan Hester

GLYCOL

No corrective action is recommended at this time. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

11 Sep 2023 Diag: Jonathan Hester

GLYCOL

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels remain high. Test for glycol is negative. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

03 Aug 2023 Diag: Wes Davis

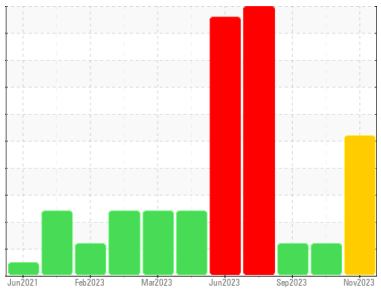
GLYCOL

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Test for glycol is positive. There is a high concentration of glycol present in the oil. Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
LIEBHERR LH50M 120556-1216
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
Sodium and/or potassium levels are high. Moderate concentration of visible dirt/debris present in the oil.

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**DJJ0022510**	DJJ0022526	DJJ0019885
Sample Date		Client Info		**16 Nov 2023**	11 Oct 2023	11 Sep 2023
Machine Age	hrs	Client Info		**8743**	8542	8352
Oil Age	hrs	Client Info		**225**	250	52
Oil Changed		Client Info		**Changed**	Changed	Not Changd
Sample Status				**ABNORMAL**	ATTENTION	ATTENTION

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>66	**3**	8	8
Chromium	ppm	ASTM D5185m	>4	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>4	**0**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**0**	1	1
Aluminum	ppm	ASTM D5185m	>8	**7**	6	8
Lead	ppm	ASTM D5185m	>10	**<1**	6	4
Copper	ppm	ASTM D5185m	>74	**10**	14	13
Tin	ppm	ASTM D5185m	>4	**<1**	2	1
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**628**	390	434
Barium	ppm	ASTM D5185m	10	**11**	95	76
Molybdenum	ppm	ASTM D5185m	100	**911**	346	352
Manganese	ppm	ASTM D5185m		**<1**	2	2
Magnesium	ppm	ASTM D5185m	450	**136**	186	191
Calcium	ppm	ASTM D5185m	3000	**628**	2474	2614
Phosphorus	ppm	ASTM D5185m	1150	**105**	707	703
Zinc	ppm	ASTM D5185m	1350	**122**	796	819
Sulfur	ppm	ASTM D5185m	4250	**2283**	3040	3835

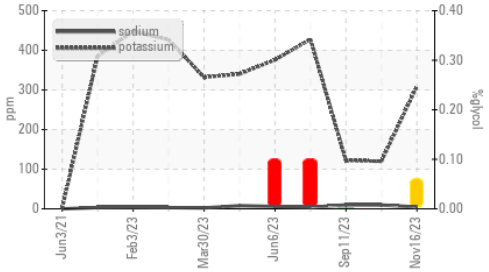
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**14**	17	17
Sodium	ppm	ASTM D5185m		**5**	10	10
Potassium	ppm	ASTM D5185m	>20	▲ **309**	▲ 120	▲ 122
Glycol	%	*ASTM D2982		▲ **0.06**	NEG	0.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**7.2**	9.0	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.6**	18.8	18.3

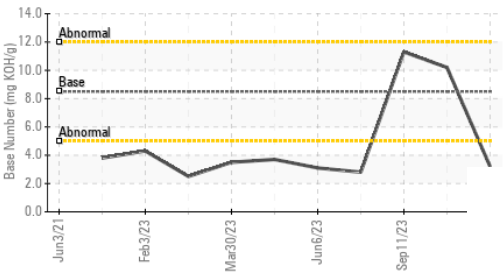
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.1**	16.4	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ **3.2**	10.2	11.3

OIL ANALYSIS REPORT

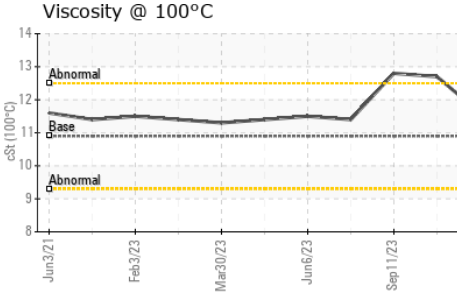
Glycol Contamination



Base Number



Viscosity @ 100°C

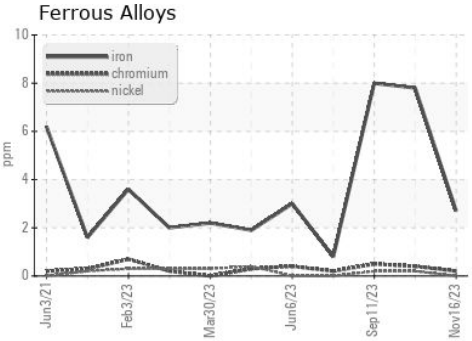


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	▲ **MODER**	NONE	NONE
Sand/Dirt	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	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

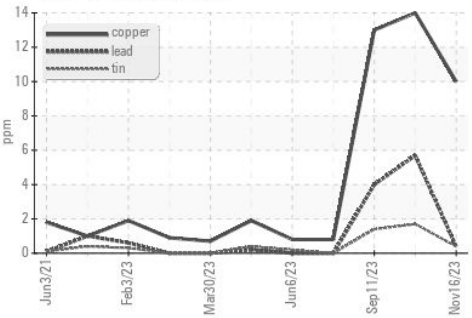
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	**11.6**	12.7	12.8

GRAPHS

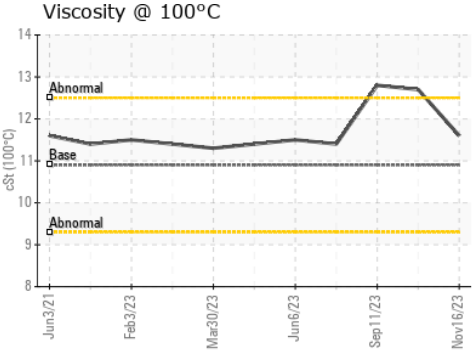
Ferrous Alloys



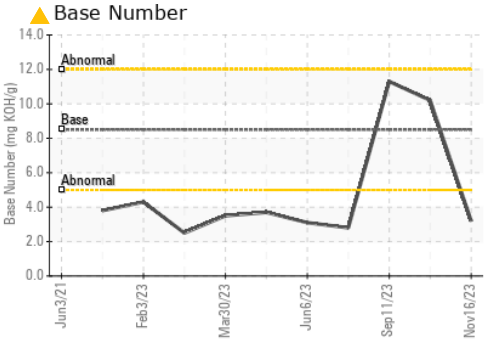
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0022510 **Received** : 21 Nov 2023
Lab Number : 06013857 **Diagnosed** : 24 Nov 2023
Unique Number : 10753001 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, TBN)

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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