LIEBHERR

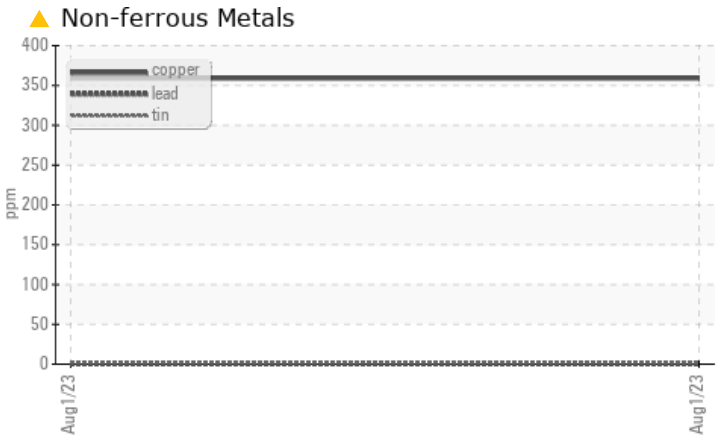
PROBLEM SUMMARY

Sample Rating Trend

WEAR

Machine Id
LIEBHERR TA 230 145963-1513
Component
Diesel Engine
Fluid
NOT GIVEN (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	---	---
Copper	ppm	ASTM D5185m	>125	▲ **359**	---	---

Customer Id: NUEHUM
Sample No.: LH0235889
Lab Number: 05925253
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
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.

HISTORICAL DIAGNOSIS

LIEBHERR

OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Machine Id
LIEBHERR TA 230 145963-1513
Component
Diesel Engine
Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

▲ Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

▲ Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**LH0235889**	---	---
Sample Date		Client Info		**01 Aug 2023**	---	---
Machine Age	hrs	Client Info		**555**	---	---
Oil Age	hrs	Client Info		**200**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**ABNORMAL**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**38**	---	---
Chromium	ppm	ASTM D5185m	>5	**2**	---	---
Nickel	ppm	ASTM D5185m	>5	**0**	---	---
Titanium	ppm	ASTM D5185m		**1**	---	---
Silver	ppm	ASTM D5185m	>3	**0**	---	---
Aluminum	ppm	ASTM D5185m	>15	**15**	---	---
Lead	ppm	ASTM D5185m	>30	**0**	---	---
Copper	ppm	ASTM D5185m	>125	▲ **359**	---	---
Tin	ppm	ASTM D5185m	>5	**2**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**64**	---	---
Barium	ppm	ASTM D5185m		**<1**	---	---
Molybdenum	ppm	ASTM D5185m		**1**	---	---
Manganese	ppm	ASTM D5185m		**2**	---	---
Magnesium	ppm	ASTM D5185m		**794**	---	---
Calcium	ppm	ASTM D5185m		**1358**	---	---
Phosphorus	ppm	ASTM D5185m		**755**	---	---
Zinc	ppm	ASTM D5185m		**897**	---	---
Sulfur	ppm	ASTM D5185m		**3675**	---	---

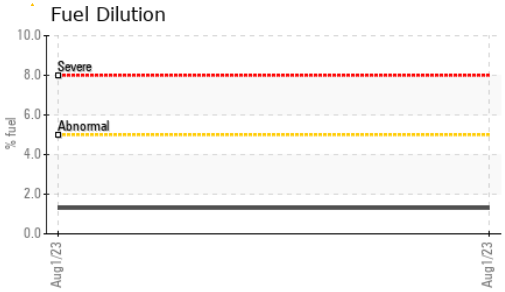
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>60	**33**	---	---
Sodium	ppm	ASTM D5185m		**0**	---	---
Potassium	ppm	ASTM D5185m	>20	**0**	---	---
Fuel	%	ASTM D3524	>5	**1.3**	---	---

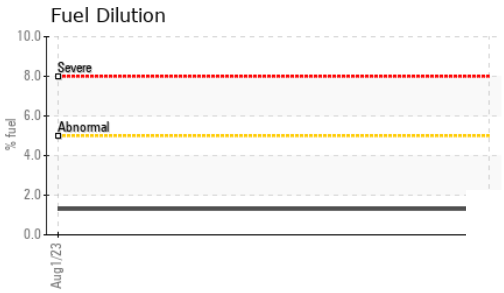
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**8.7**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.2**	---	---

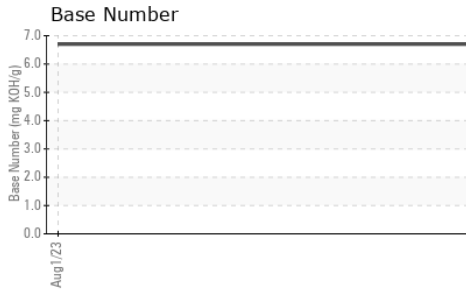
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.3**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		**6.7**	---	---

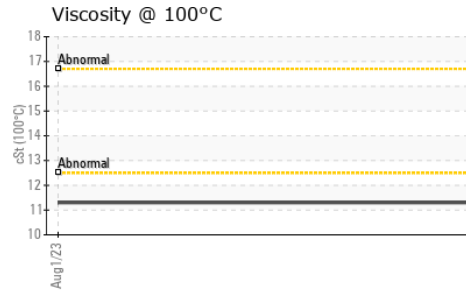
LIEBHERR

OIL ANALYSIS REPORT





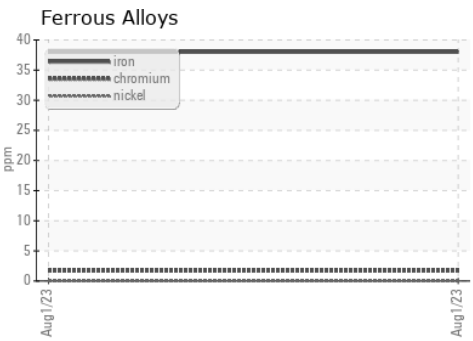


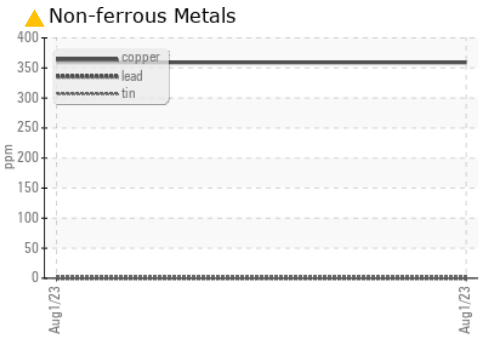


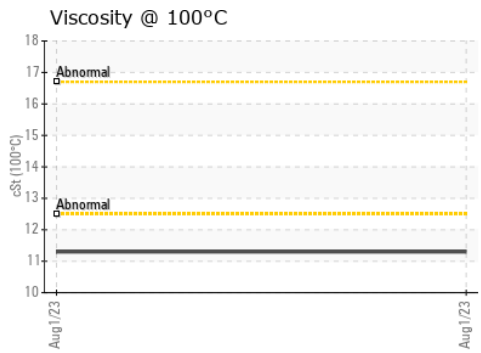
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	---	---
Appearance	scalar	*Visual	NORML	**NORML**	---	---
Odor	scalar	*Visual	NORML	**NORML**	---	---
Emulsified Water	scalar	*Visual	>0.2	**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

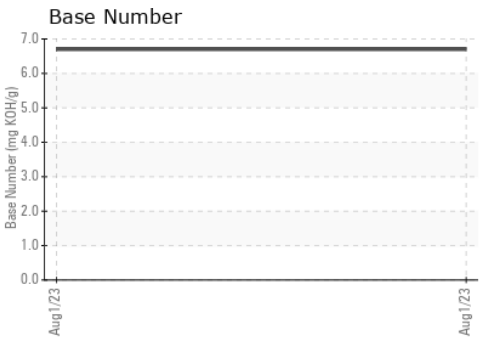
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**11.3**	---	---

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0235889 **Received** : 15 Aug 2023
Lab Number : 05925253 **Diagnosed** : 17 Aug 2023
Unique Number : 10605200 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, 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)

NUECES POWER EQUIPMENT
7667 N SAM HOUSTON PKWY EAST
HUMBLE, TX
US 77396
Contact: SARKES GONZALEZ
sgonzalez@npetex.com
T: (713)247-0066
F: (713)941-2262