



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
TMR-Riviera Beach
 Machine Id
231160 LIEBHERR LH40M 1202-75762
 Component
Diesel Engine
 Fluid
AMALIE 15W40 (30 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0023199	DJJ0021106	DJJ0006588
Sample Date		Client Info		09 Jul 2024	13 Oct 2023	04 Oct 2022
Machine Age	hrs	Client Info		15282	14181	12796
Oil Age	hrs	Client Info		500	0	0
Filter Age	hrs	Client Info		500	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	9	8	34
Chromium	ppm	ASTM D5185m	>5	<1	<1	1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	7	6	▲ 25
Lead	ppm	ASTM D5185m	>30	0	<1	3
Copper	ppm	ASTM D5185m	>125	2	2	12
Tin	ppm	ASTM D5185m	>5	0	<1	2
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

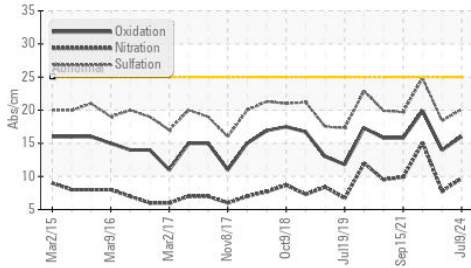
Silicon	ppm	ASTM D5185m	>60	6	6	9
Potassium	ppm	ASTM D5185m	>20	7	1	2
Fuel		WC Method	>5	<1.0	<1.0	1.8
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.8	0.5	1.9
Nitration	Abs/cm	*ASTM D7624	>20	9.7	7.8	15.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	18.4	24.8
Silt	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	NEG	NEG	NEG

FLUID CONDITION

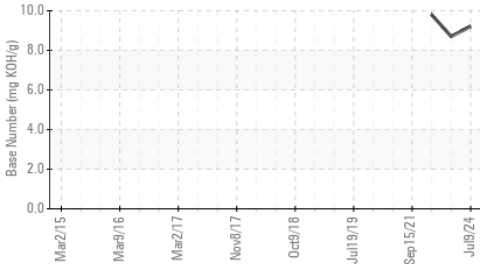
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	0	<1
Boron	ppm	ASTM D5185m		13	2	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		72	60	63
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		950	903	941
Calcium	ppm	ASTM D5185m		1069	1015	1158
Phosphorus	ppm	ASTM D5185m		1034	927	1042
Zinc	ppm	ASTM D5185m		1226	1194	1264
Sulfur	ppm	ASTM D5185m		3496	3302	3703
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.0	14.0	19.9
Base Number (BN)	mg KOH/g	ASTM D2896		9.2	8.7	9.8
Visc @ 100°C	cSt	ASTM D445		14.2	14.1	11.6

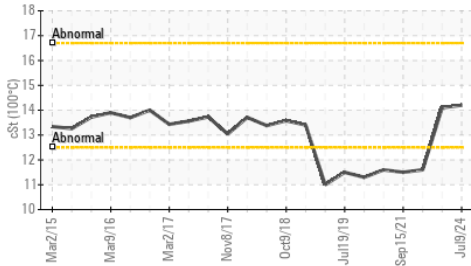
FT-IR (Direct Trend)



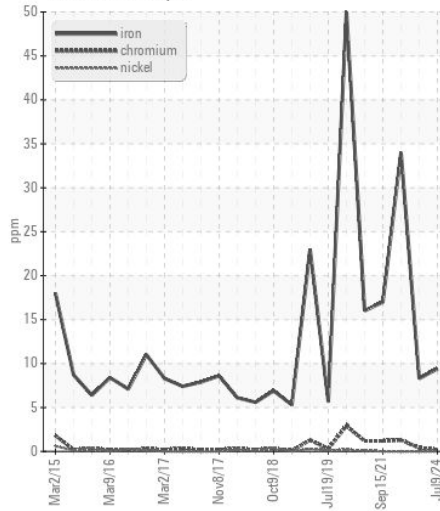
Base Number



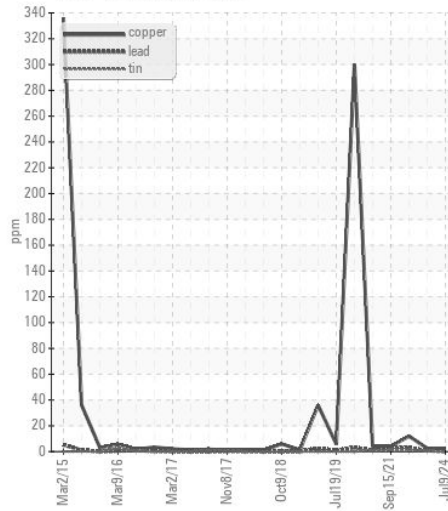
Viscosity @ 100°C



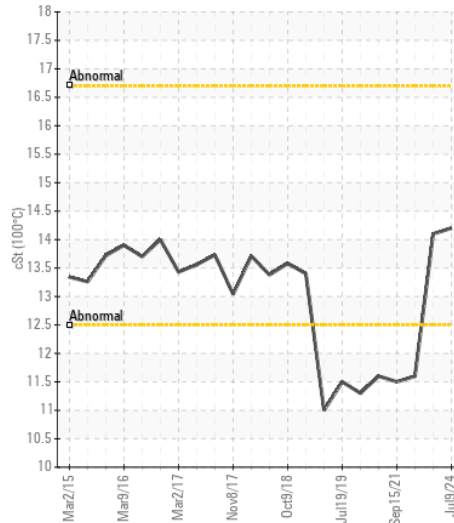
Ferrous Alloys



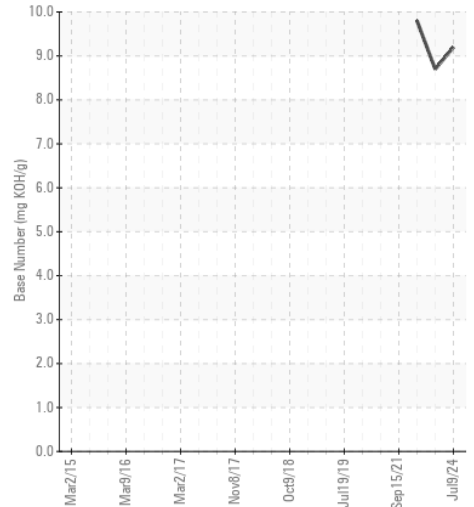
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0023199 **Received** : 15 Jul 2024
Lab Number : 06235633 **Tested** : 16 Jul 2024
Unique Number : 11124467 **Diagnosed** : 16 Jul 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

TRADEMARK METALS RECYCLING - RIVIERA BEACH
 4661 DYER BLVD
 WEST PALM BEACH, FL
 US 33407
 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)

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