



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
MACK 202315
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (40 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0957005	WC0907637	WC0756853
Sample Date		Client Info		26 Jun 2024	07 Feb 2024	11 Oct 2023
Machine Age	mls	Client Info		44932	40408	36398
Oil Age	mls	Client Info		4524	4010	5081
Filter Age	mls	Client Info		4524	4010	5081
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	18	11	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	1	1
Lead	ppm	ASTM D5185m	>40	1	<1	1
Copper	ppm	ASTM D5185m	>330	3	4	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
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.

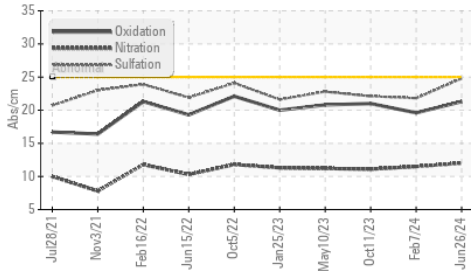
Silicon	ppm	ASTM D5185m	>25	4	4	4
Potassium	ppm	ASTM D5185m	>20	2	1	<1
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	1.1	0.6	0.7
Nitration	Abs/cm	*ASTM D7624	>20	12.0	11.5	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.8	21.8	22.1
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

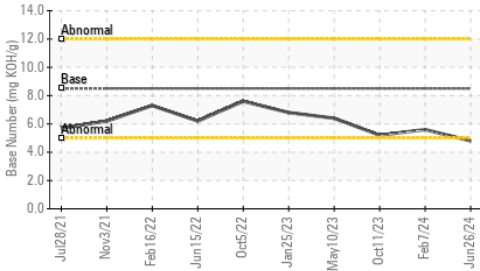
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	4	3	4
Boron	ppm	ASTM D5185m	250	16	21	20
Barium	ppm	ASTM D5185m	10	0	0	3
Molybdenum	ppm	ASTM D5185m	100	48	54	49
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	599	796	659
Calcium	ppm	ASTM D5185m	3000	1522	1211	1141
Phosphorus	ppm	ASTM D5185m	1150	771	701	592
Zinc	ppm	ASTM D5185m	1350	1020	950	777
Sulfur	ppm	ASTM D5185m	4250	3022	2485	1889
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.3	19.6	21.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	4.8	5.6	5.2
Visc @ 100°C	cSt	ASTM D445	14.4	14.3	14.1	14.4

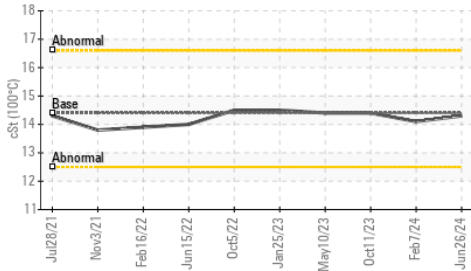
FT-IR (Direct Trend)



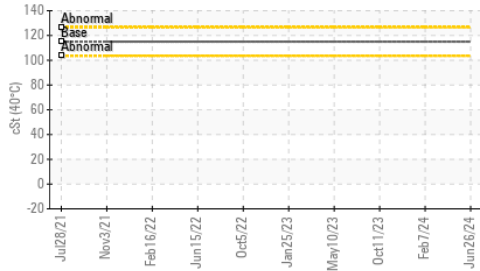
Base Number



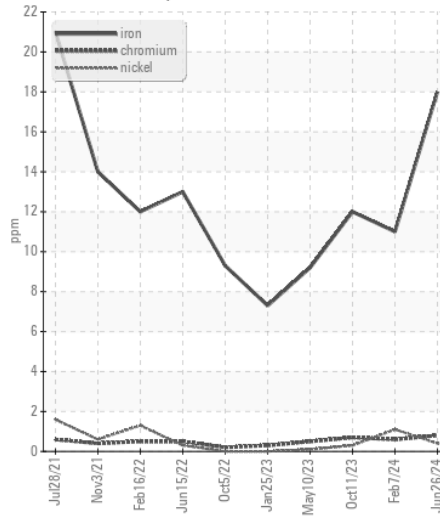
Viscosity @ 100°C



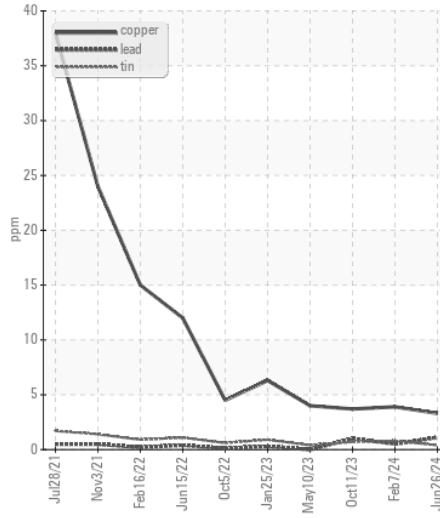
Viscosity @ 40°C



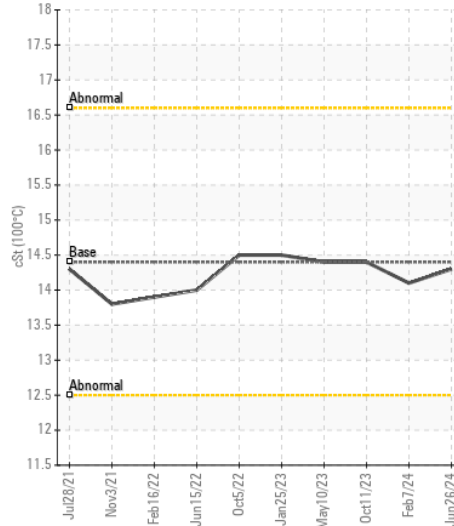
Ferrous Alloys



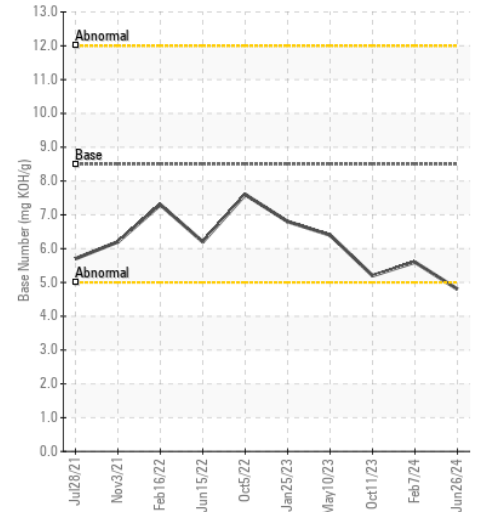
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0957005 **Received** : 02 Jul 2024
Lab Number : 06225881 **Tested** : 05 Jul 2024
Unique Number : 11109374 **Diagnosed** : 05 Jul 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: KV40)

CITY OF GREENSBORO
 401 PATTON AVE - BUILDING H
 GREENSBORO, NC
 US 27406
 Contact: JERRY GUNTER
 jerry.gunter@greensboro-nc.gov

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: x
 F: x