

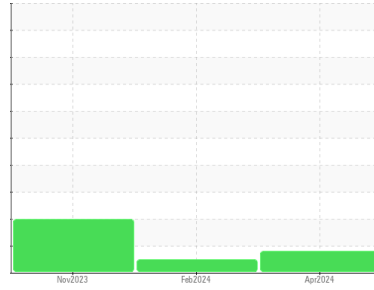


OIL ANALYSIS REPORT



Area
(BD70667)
Machine Id
814029 MACK LR64R
Component
Diesel Engine
Fluid
TIER ONE 15W40 (--- GAL)

Sample Rating Trend



WEAR



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

An increase in the copper level is noted. All other component wear rates are normal.

Contamination

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 suitable for further service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0102231	GFL0102215	GFL0102211
Sample Date	Client Info	03 Apr 2024	21 Feb 2024	27 Nov 2023
Machine Age	hrs	1044	772	290
Oil Age	hrs	2	184	290
Oil Changed	Client Info	Changed	Not Changd	Not Changd
Sample Status		ATTENTION	NORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<1.0	<1.0	0.4
Water	WC Method >0.2	NEG	NEG	NEG
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >120	20	12	25
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	4	4	6
Titanium	ppm ASTM D5185m >2	0	<1	1
Silver	ppm ASTM D5185m >2	<1	<1	<1
Aluminum	ppm ASTM D5185m >20	<1	2	5
Lead	ppm ASTM D5185m >40	2	<1	0
Copper	ppm ASTM D5185m >330	220	73	37
Tin	ppm ASTM D5185m >15	<1	<1	2
Vanadium	ppm ASTM D5185m	0	<1	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	14	38	374
Barium	ppm ASTM D5185m	0	0	0
Molybdenum	ppm ASTM D5185m	60	59	118
Manganese	ppm ASTM D5185m	<1	1	3
Magnesium	ppm ASTM D5185m	895	889	674
Calcium	ppm ASTM D5185m	1164	1147	1531
Phosphorus	ppm ASTM D5185m	987	892	723
Zinc	ppm ASTM D5185m	1174	1135	830
Sulfur	ppm ASTM D5185m	3033	2951	2269

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	10	15	▲ 99
Sodium	ppm ASTM D5185m	3	3	3
Potassium	ppm ASTM D5185m >20	<1	4	1

INFRA-RED

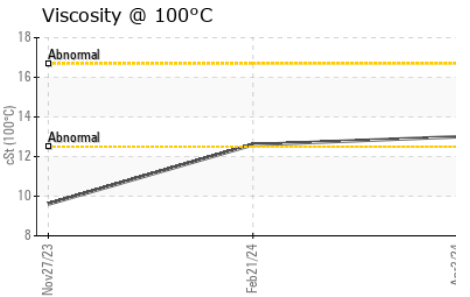
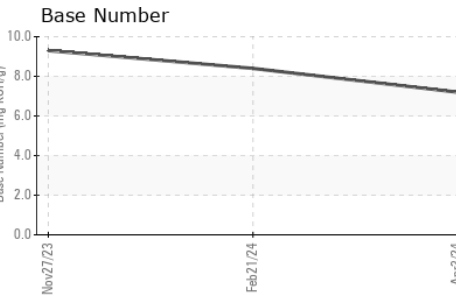
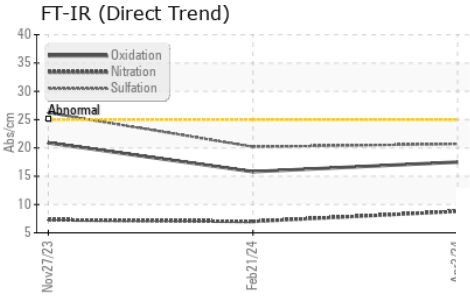
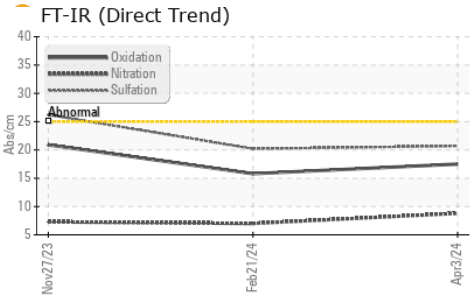
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.6	0.3	0.2
Nitration	Abs/cm *ASTM D7624 >20	8.8	7.0	7.3
Sulfation	Abs/.1mm *ASTM D7415 >30	20.7	20.2	26.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.5	15.8	20.9
Base Number (BN)	mg KOH/g ASTM D2896	7.2	8.4	9.3



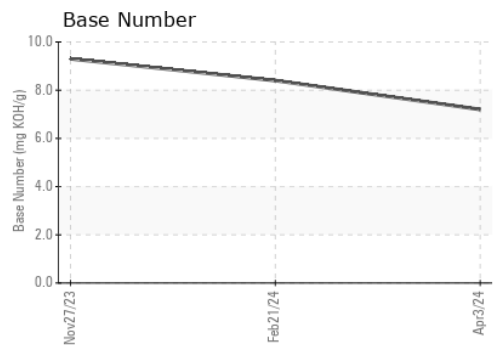
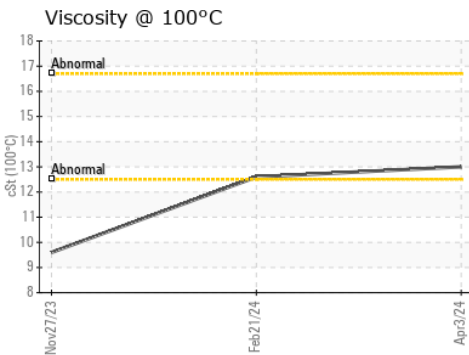
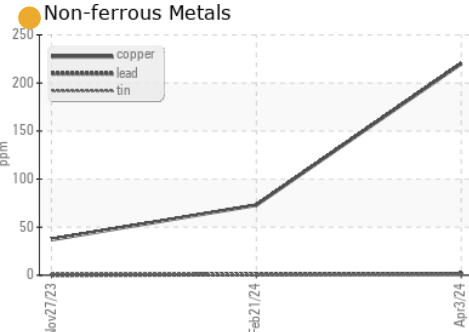
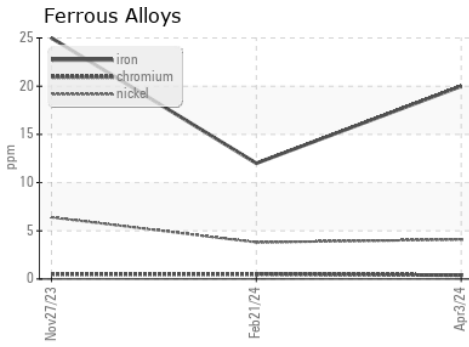
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.0	12.6	9.6

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0102231 **Received** : 08 Apr 2024
Lab Number : 06141935 **Tested** : 09 Apr 2024
Unique Number : 10966743 **Diagnosed** : 10 Apr 2024 - Don Baldrige
Test Package : FLEET

GFL Environmental - 642- Grand Rapids Hauling
 5826 Alden Nash Ave SE
 Lowell, MI
 US 49331

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)

Contact: Chad Crosby
 ccrosby@gflenv.com
 T: (616)299-8425
 F: