



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER 103
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (14 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0827727	WC0827811	WC0827687
Sample Date		Client Info		13 May 2024	15 Mar 2024	13 Dec 2023
Machine Age	mls	Client Info		389161	363817	332024
Oil Age	mls	Client Info		6380	0	28793
Filter Age	mls	Client Info		6380	0	28793
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	ATTENTION	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	13	27	17
Chromium	ppm	ASTM D5185m	>15	1	2	1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>15	3	6	4
Lead	ppm	ASTM D5185m	>50	2	5	2
Copper	ppm	ASTM D5185m	>170	1	2	0
Tin	ppm	ASTM D5185m	>4	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

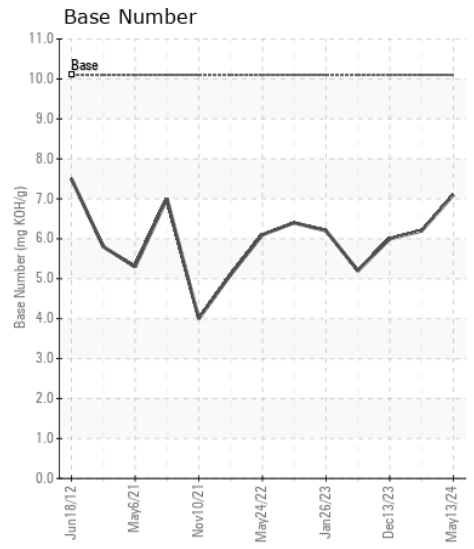
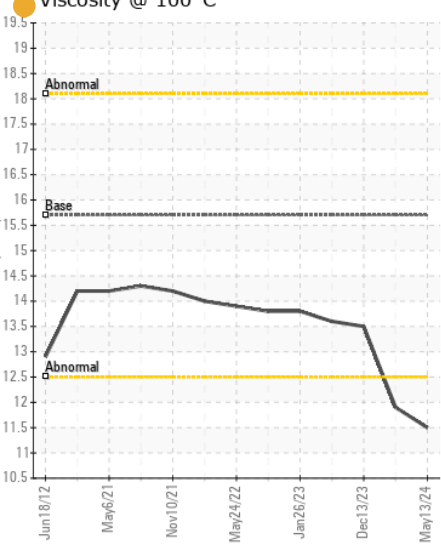
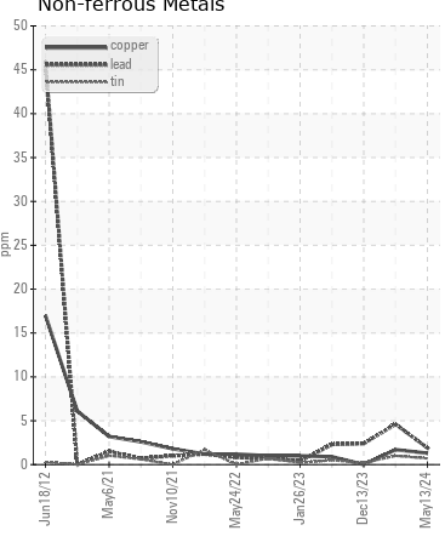
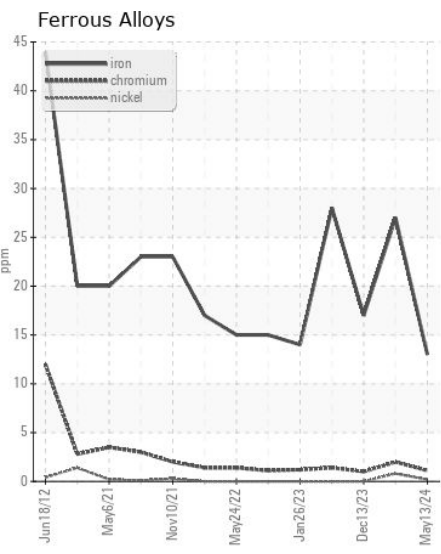
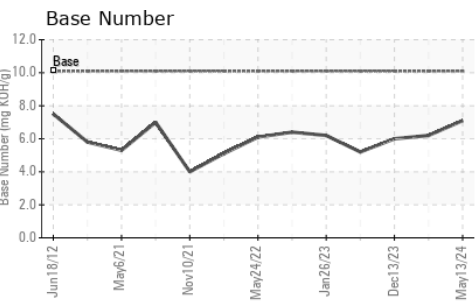
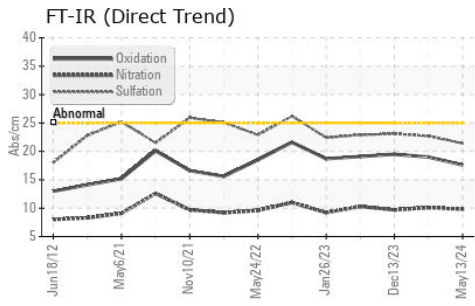
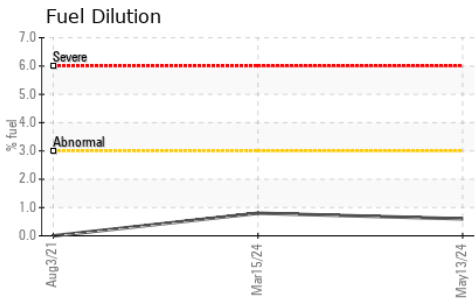
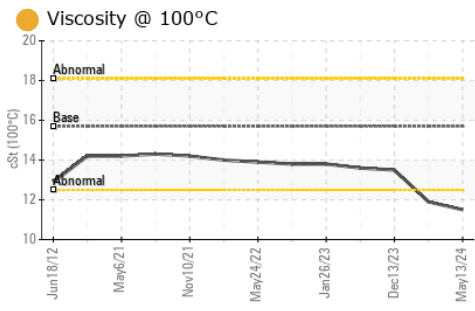
Fuel content negligible. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	5	7	4
Potassium	ppm	ASTM D5185m	>20	6	9	4
Fuel	%	ASTM D3524	>3.0	0.6	0.8	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.5	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	9.8	10.1	9.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.4	22.7	23.1
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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		2	3	<1
Boron	ppm	ASTM D5185m	316	12	17	33
Barium	ppm	ASTM D5185m	0.0	0	<1	0
Molybdenum	ppm	ASTM D5185m	1.2	65	93	65
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	24	921	1189	417
Calcium	ppm	ASTM D5185m	2292	1164	1911	1774
Phosphorus	ppm	ASTM D5185m	1064	981	1554	1058
Zinc	ppm	ASTM D5185m	1160	1283	1853	1283
Sulfur	ppm	ASTM D5185m	4996	3118	4578	3108
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	19.0	19.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	7.1	6.2	6.0
Visc @ 100°C	cSt	ASTM D445	15.7	11.5	11.9	13.5



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0827727 **Received** : 22 May 2024
Lab Number : 06188542 **Tested** : 28 May 2024
Unique Number : 11045294 **Diagnosed** : 28 May 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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)