FLEET WEAR CHECK

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	SEVERE
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER FTL-120
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (11 GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

Piston, ring and cylinder wear is indicated.

CONTAMINATION

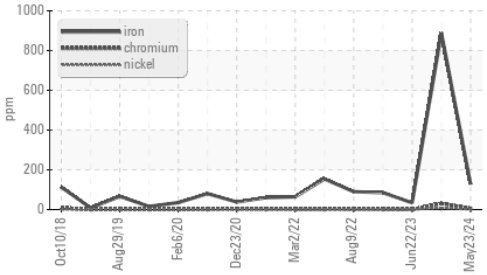
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLUID CONDITION

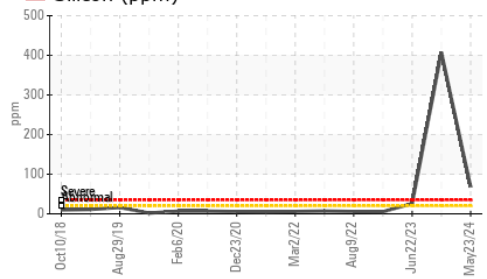
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013658	KL0013654	KL0007309
Sample Date		Client Info		23 May 2024	07 May 2024	22 Jun 2023
Machine Age	mls	Client Info		333130	332640	321189
Oil Age	mls	Client Info		490	11451	11034
Filter Age	mls	Client Info		490	11451	11034
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>80	▲ 128	▲ 888	34
Chromium	ppm	ASTM D5185m	>5	▲ 5	▲ 31	<1
Nickel	ppm	ASTM D5185m	>2	<1	▲ 7	<1
Titanium	ppm	ASTM D5185m		2	10	<1
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>30	● 26	● 136	5
Lead	ppm	ASTM D5185m	>30	13	▲ 54	12
Copper	ppm	ASTM D5185m	>150	13	▲ 51	3
Tin	ppm	ASTM D5185m	>5	<1	11	<1
Vanadium	ppm	ASTM D5185m		<1	1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	▲ 68	▲ 407	▲ 26
Potassium	ppm	ASTM D5185m	>20	8	41	11
Fuel		WC Method	>5	<1.0	0.9	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	10.4	9.6	10.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.6	26.2	25.5
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
Sodium	ppm	ASTM D5185m		4	13	0
Boron	ppm	ASTM D5185m	316	77	64	63
Barium	ppm	ASTM D5185m	0.0	0	0	2
Molybdenum	ppm	ASTM D5185m	1.2	56	54	56
Manganese	ppm	ASTM D5185m		2	9	<1
Magnesium	ppm	ASTM D5185m	24	492	453	88
Calcium	ppm	ASTM D5185m	2292	2118	1854	2153
Phosphorus	ppm	ASTM D5185m	1064	1285	1184	941
Zinc	ppm	ASTM D5185m	1160	1516	1344	1101
Sulfur	ppm	ASTM D5185m	4996	3983	3730	3376
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.7	19.7	21.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.3	8.7	4.8
Visc @ 100°C	cSt	ASTM D445	15.7	● 12.2	▲ 12.3	13.1

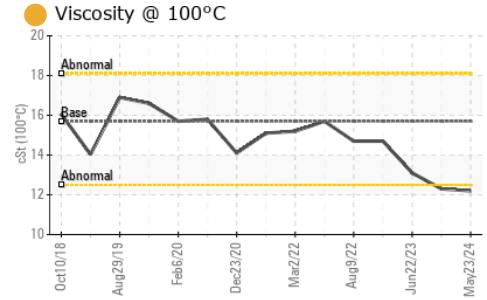
Ferrous Alloys



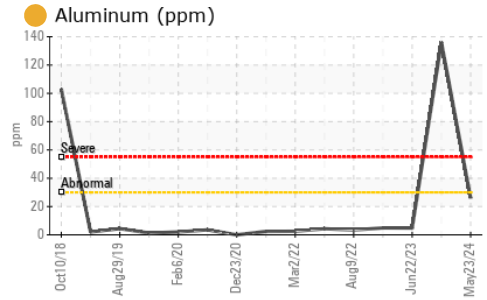
Silicon (ppm)



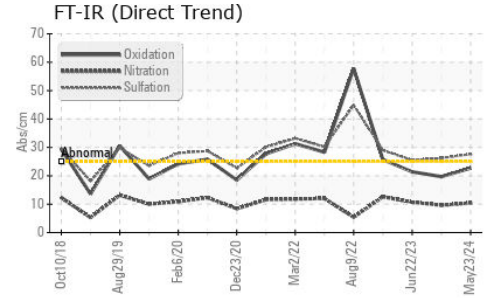
Viscosity @ 100°C



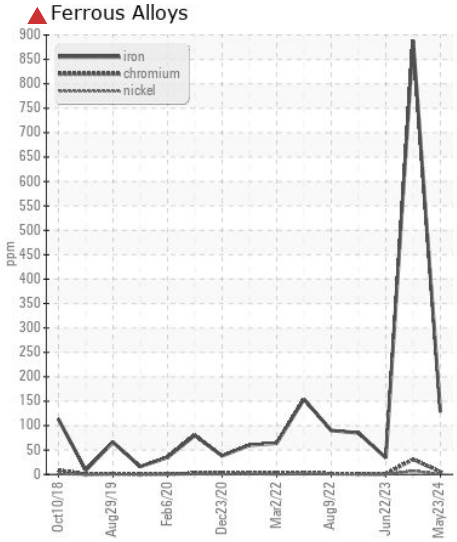
Aluminum (ppm)



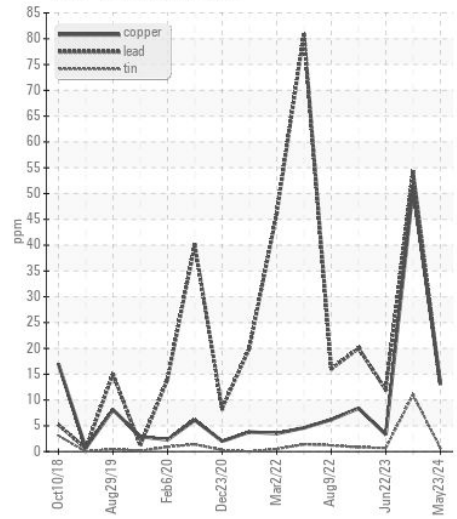
FT-IR (Direct Trend)



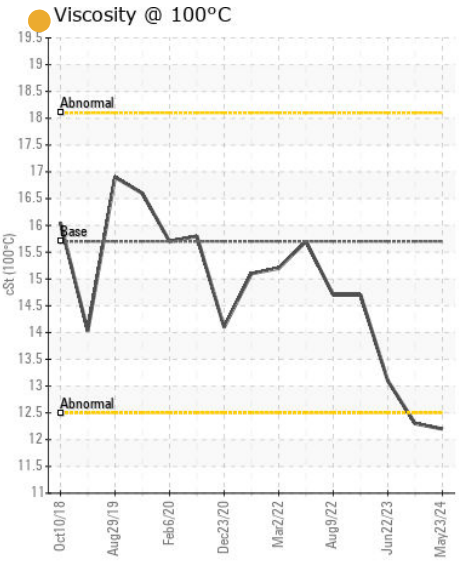
Ferrous Alloys



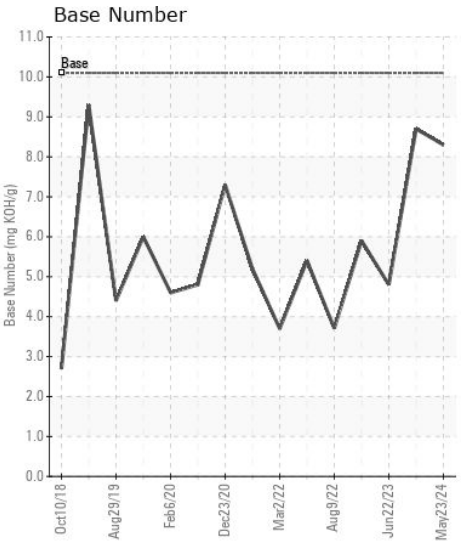
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013658
Lab Number : 06197231
Unique Number : 11059354
Test Package : FLEET

Received : 03 Jun 2024
Tested : 03 Jun 2024
Diagnosed : 04 Jun 2024 - Don Baldridge

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)

FTL LTD
2302 E DUPONT AVE
BELLE, WV
US 25015
Contact: JOHN SMITH
johnhotrodsmith@gmail.com
T:
F: