MOB WEAR CHECK I+

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
FREIGHTLINER AL-210
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- QTS)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

WEAR

All component wear rates are normal.

CONTAMINATION

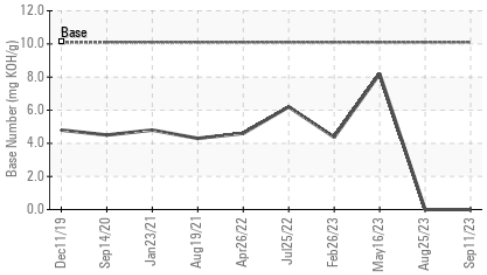
There is an abnormal amount of solids and carbon present in the oil.

FLUID CONDITION

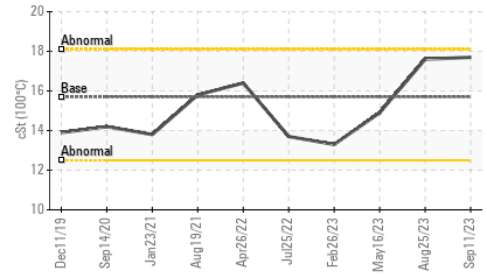
The oil viscosity is higher than normal. The BN level is low.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0007291	KL0011551	KL0008467
Sample Date		Client Info		11 Sep 2023	25 Aug 2023	16 May 2023
Machine Age	mls	Client Info		249812	248160	230045
Oil Age	mls	Client Info		1752	0	48832
Filter Age	mls	Client Info		1752	0	48832
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ABNORMAL	ABNORMAL	NORMAL
Iron	ppm	ASTM D5185m	>165	103	87	22
Chromium	ppm	ASTM D5185m	>5	2	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	5	8	3
Lead	ppm	ASTM D5185m	>150	37	30	5
Copper	ppm	ASTM D5185m	>90	6	4	0
Tin	ppm	ASTM D5185m	>5	3	2	1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>35	9	8	5
Potassium	ppm	ASTM D5185m	>20	5	<1	8
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	>7.5	▲ 5.3	▲ 5	2
Nitration	Abs/cm	*ASTM D7624	>20	17.4	16.0	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	38.2	35.8	26.4
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		9	7	9
Boron	ppm	ASTM D5185m	316	37	33	38
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	55	51	84
Manganese	ppm	ASTM D5185m		2	<1	<1
Magnesium	ppm	ASTM D5185m	24	622	524	635
Calcium	ppm	ASTM D5185m	2292	1852	1724	1630
Phosphorus	ppm	ASTM D5185m	1064	1134	1032	1120
Zinc	ppm	ASTM D5185m	1160	1433	1265	1400
Sulfur	ppm	ASTM D5185m	4996	3353	3019	3886
Oxidation	Abs/.1mm	*ASTM D7414	>25	33.6	29.4	21.3
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	▲ 0.0	▲ 0.0	8.2
Visc @ 100°C	cSt	ASTM D445	15.7	▲ 17.7	▲ 17.6	14.9

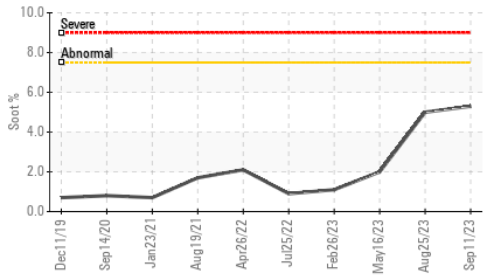
Base Number



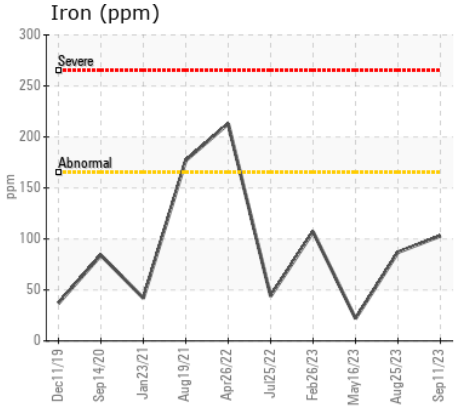
Viscosity @ 100°C



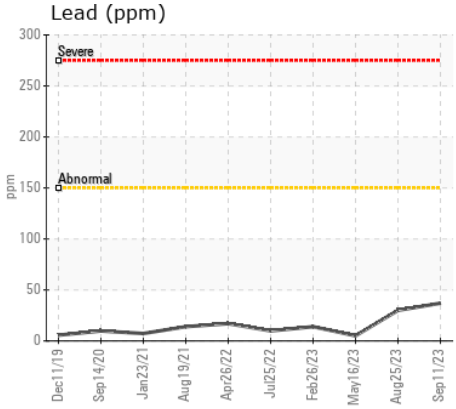
Soot %



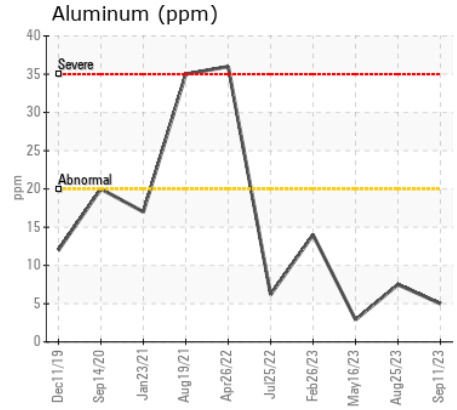
Iron (ppm)



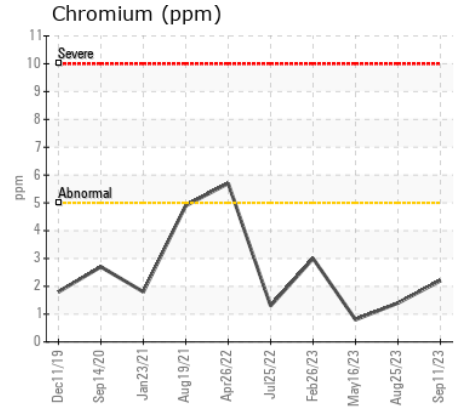
Lead (ppm)



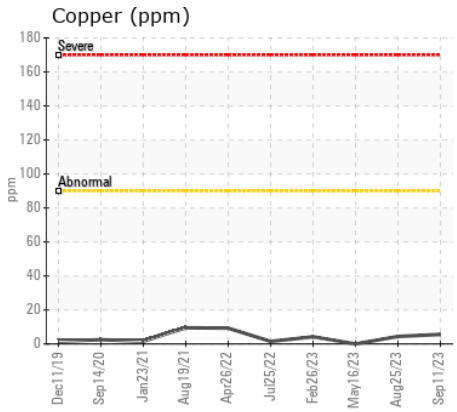
Aluminum (ppm)



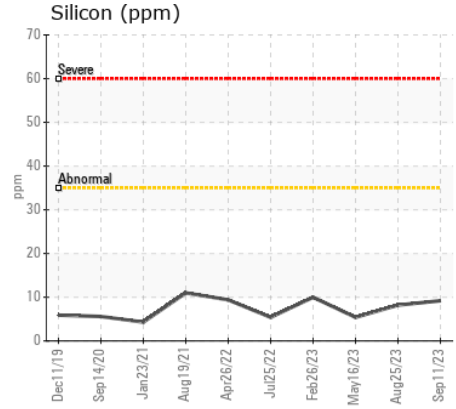
Chromium (ppm)



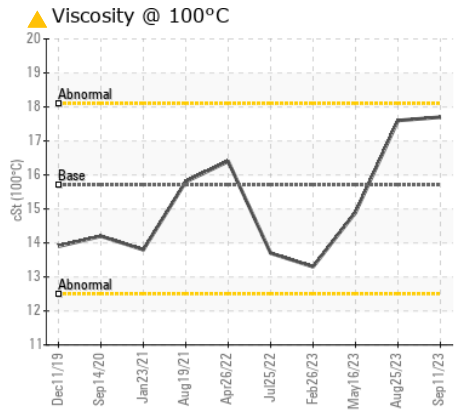
Copper (ppm)



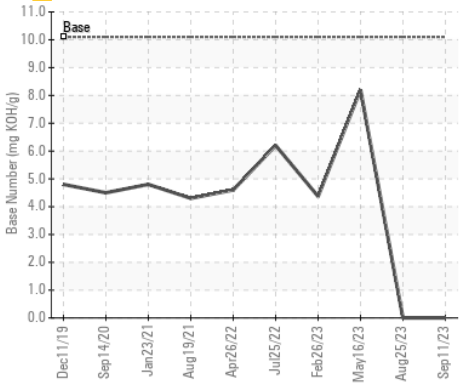
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0007291
Lab Number : 05958494
Unique Number : 10659707
Test Package : MOB1+

Received : 22 Sep 2023
Tested : 24 Sep 2023
Diagnosed : 24 Sep 2023 - 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: