



WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ABNORMAL

Machine Id
04 FREIGHTLINER 305E
Component
Front Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (29 QTS)

RECOMMENDATION

The oil is near the end of it's useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013279	KL0013271	KL0011654
Sample Date		Client Info		26 Jan 2024	11 Oct 2023	12 Jul 2023
Machine Age	hrs	Client Info		0	0	710
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

The iron level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	▲ 112	100	78
Chromium	ppm	ASTM D5185m	>20	4	4	3
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>25	9	8	6
Lead	ppm	ASTM D5185m	>40	1	<1	0
Copper	ppm	ASTM D5185m	>330	21	19	16
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

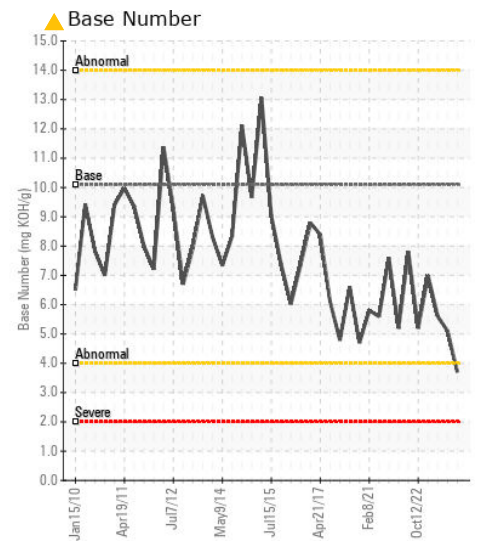
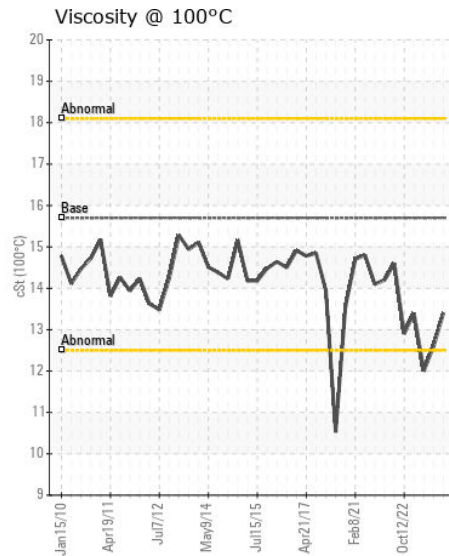
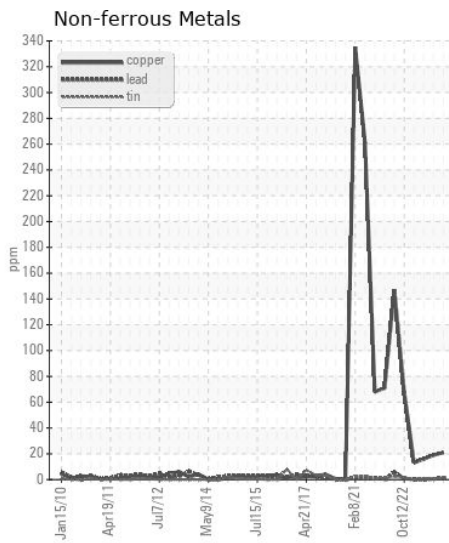
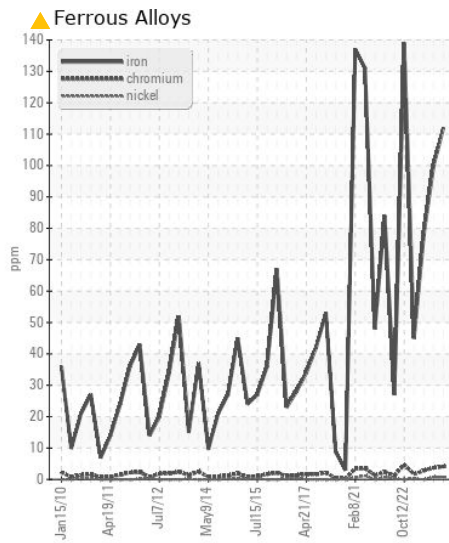
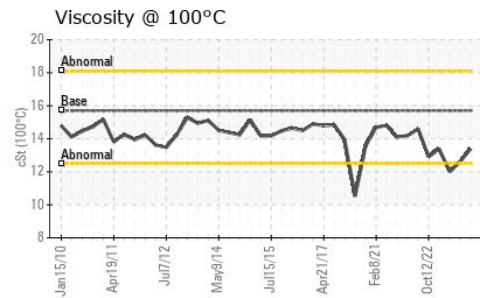
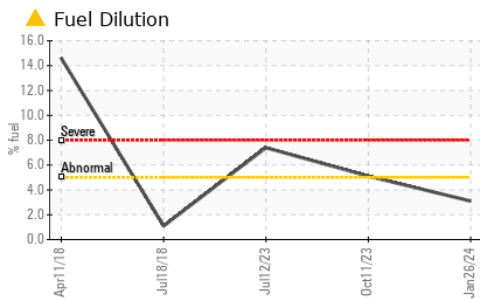
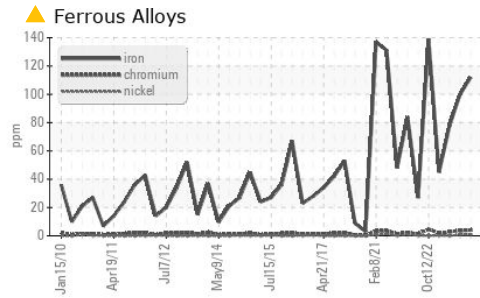
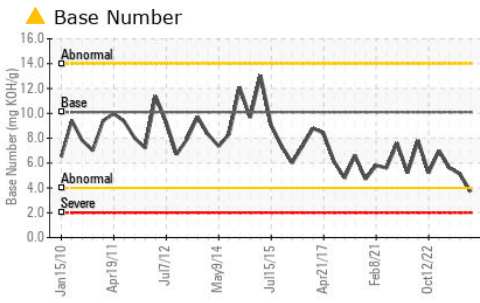
Light fuel dilution occurring.

Silicon	ppm	ASTM D5185m	>25	14	15	9
Potassium	ppm	ASTM D5185m	>20	9	8	6
Fuel	%	ASTM D3524	>5	▲ 3.1	▲ 5.1	▲ 7.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.2	1.9	1.6
Nitration	Abs/cm	*ASTM D7624	>20	15.7	13.7	12.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	33.8	30.8	28.7
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 level is low. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		14	7	8
Boron	ppm	ASTM D5185m	316	64	93	137
Barium	ppm	ASTM D5185m	0.0	0	3	0
Molybdenum	ppm	ASTM D5185m	1.2	99	106	105
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m	24	478	447	494
Calcium	ppm	ASTM D5185m	2292	1247	1273	1338
Phosphorus	ppm	ASTM D5185m	1064	810	729	804
Zinc	ppm	ASTM D5185m	1160	944	919	967
Sulfur	ppm	ASTM D5185m	4996	2827	3107	3662
Oxidation	Abs/.1mm	*ASTM D7414	>25	37.2	33.8	30.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	▲ 3.7	5.1	5.6
Visc @ 100°C	cSt	ASTM D445	15.7	13.4	12.6	▲ 12.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : KL0013279

Lab Number : 06089468

Unique Number : 10876913

Test Package : FLEET (Additional Tests: PercentFuel)

Received : 14 Feb 2024

Tested : 19 Feb 2024

Diagnosed : 19 Feb 2024 - Jonathan Hester

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)

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