



# OIL ANALYSIS REPORT

WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>ABNORMAL</b>

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		<b>KL0013578</b>	KL0013279	KL0013271
Sample Date		Client Info		<b>06 Jun 2024</b>	26 Jan 2024	11 Oct 2023
Machine Age	hrs	Client Info		<b>37034</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>100	<b>▲ 149</b>	▲ 112	100
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	4	4
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>25	<b>9</b>	9	8
Lead	ppm	ASTM D5185m	>40	<b>0</b>	1	<1
Copper	ppm	ASTM D5185m	>330	<b>24</b>	21	19
Tin	ppm	ASTM D5185m	>15	<b>2</b>	2	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

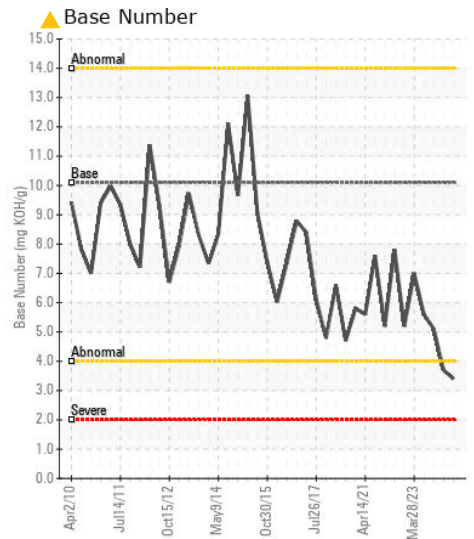
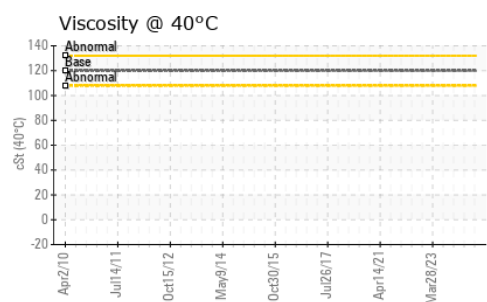
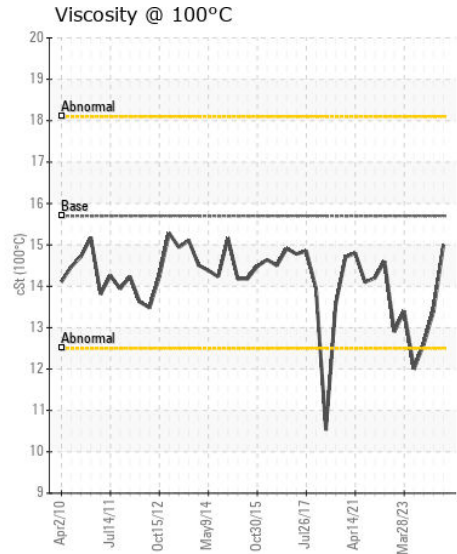
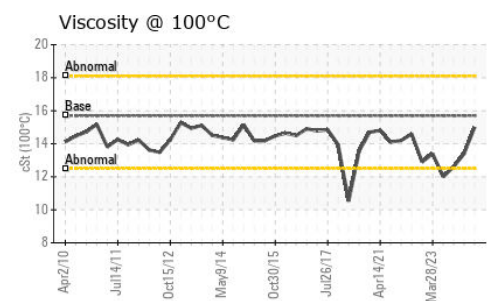
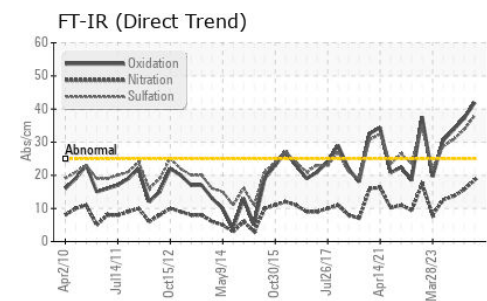
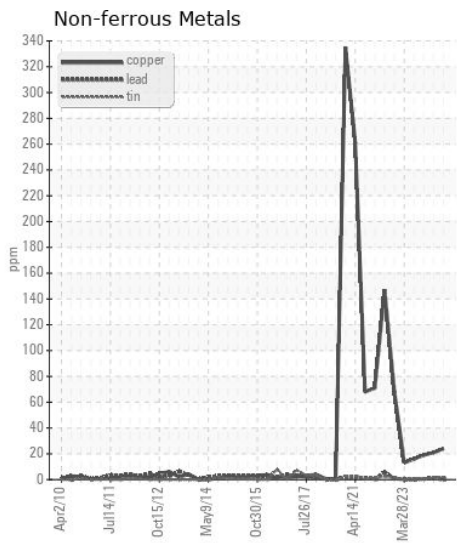
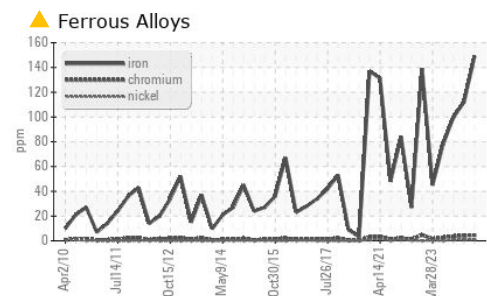
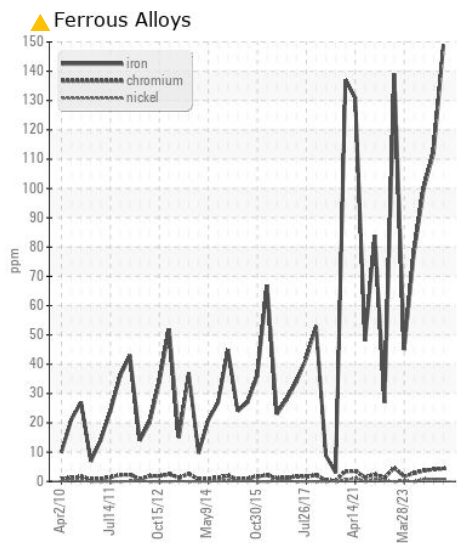
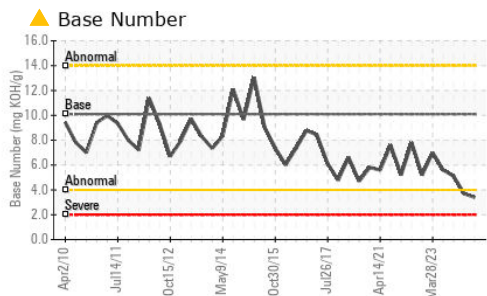
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>15</b>	14	15
Potassium	ppm	ASTM D5185m	>20	<b>9</b>	9	8
Fuel		WC Method	>5	<b>&lt;1.0</b>	▲ 3.1	▲ 5.1
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2.8</b>	2.2	1.9
Nitration	Abs/cm	*ASTM D7624	>20	<b>18.6</b>	15.7	13.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>38.0</b>	33.8	30.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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		<b>18</b>	14	7
Boron	ppm	ASTM D5185m	316	<b>73</b>	64	93
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	3
Molybdenum	ppm	ASTM D5185m	1.2	<b>101</b>	99	106
Manganese	ppm	ASTM D5185m		<b>2</b>	2	1
Magnesium	ppm	ASTM D5185m	24	<b>498</b>	478	447
Calcium	ppm	ASTM D5185m	2292	<b>1358</b>	1247	1273
Phosphorus	ppm	ASTM D5185m	1064	<b>839</b>	810	729
Zinc	ppm	ASTM D5185m	1160	<b>991</b>	944	919
Sulfur	ppm	ASTM D5185m	4996	<b>3315</b>	2827	3107
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>41.9</b>	37.2	33.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>▲ 3.4</b>	▲ 3.7	5.1
Visc @ 100°C	cSt	ASTM D445	15.7	<b>15.0</b>	13.4	12.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0013578  
**Lab Number** : 06226868  
**Unique Number** : 11110361  
**Test Package** : FLEET ( Additional Tests: KV40 )

**Received** : 02 Jul 2024  
**Tested** : 05 Jul 2024  
**Diagnosed** : 05 Jul 2024 - Jonathan Hester

**CITY OF ARTESIA**  
P.O. BOX 1310  
ARTESIA, NM  
US 88211

Contact: JIMMY L. BUSTAMANTE  
JBUSTAMANTE@ARTESIANM.GOV

T: (575)748-8812  
F: (575)746-2390

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)