



# OIL ANALYSIS REPORT

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

Area  
**TRUCK - URBAN**  
Machine Id  
**FREIGHTLINER 143**  
Component  
**Diesel Engine**  
Fluid  
**SHELL Rotella T5 15W-40 (7 GAL)**

## RECOMMENDATION

We advise that you check the fuel injection system. 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		<b>PE0004040</b>	PE0000511	PE0001169
Sample Date		Client Info		<b>10 Jun 2024</b>	01 May 2023	22 Feb 2023
Machine Age	mls	Client Info		<b>92689</b>	61970	54089
Oil Age	mls	Client Info		<b>15200</b>	7881	6789
Filter Age	mls	Client Info		<b>15200</b>	7881	6789
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	<b>34</b>	11	14
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	<1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>30	<b>21</b>	12	22
Lead	ppm	ASTM D5185m	>30	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>150	<b>3</b>	2	2
Tin	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

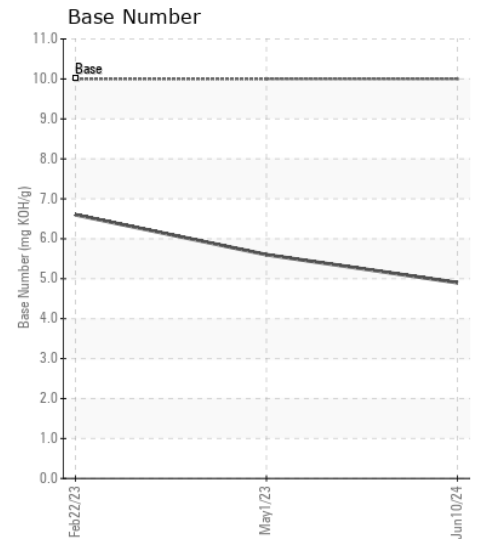
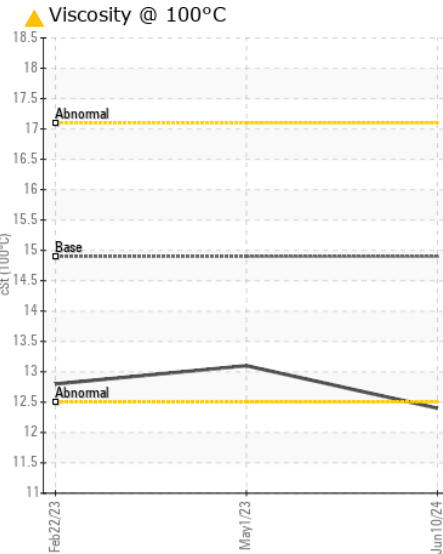
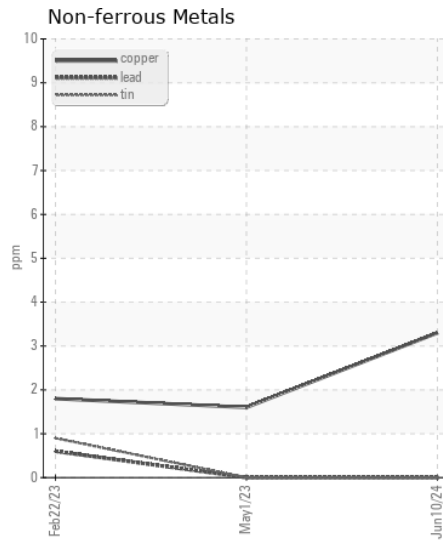
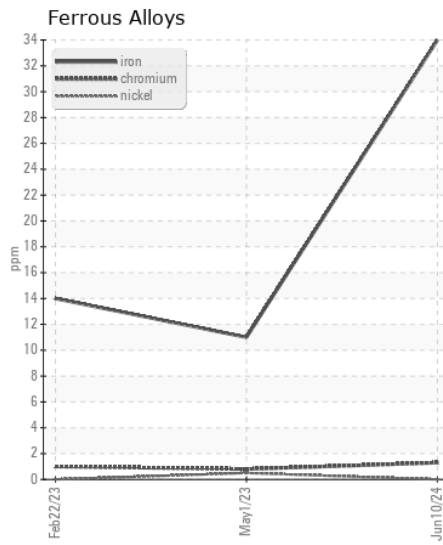
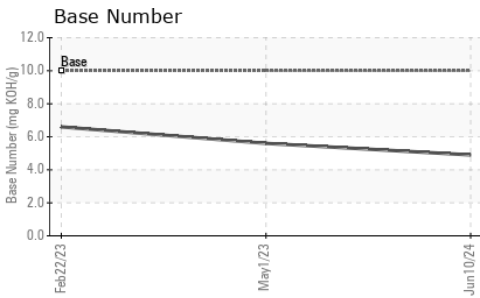
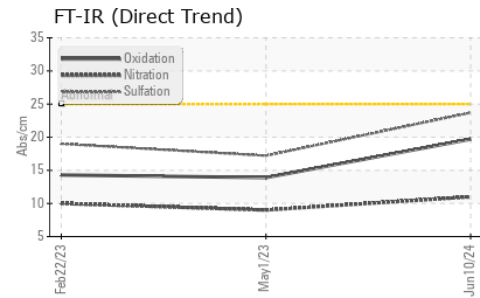
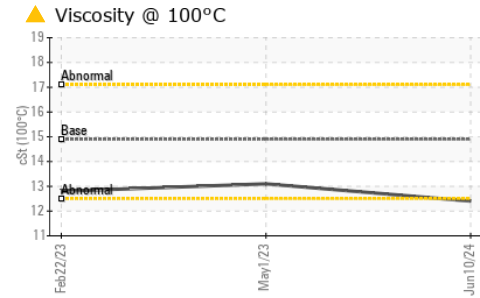
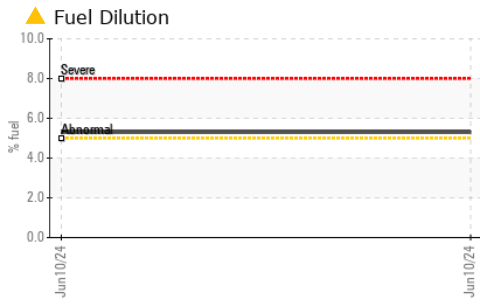
There is a moderate amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>6</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>32</b>	15	41
Fuel	%	ASTM D3524	>5	<b>▲ 5.3</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.8</b>	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.0</b>	9.0	10.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.7</b>	17.2	19.0
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

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<b>7</b>	2	5
Boron	ppm	ASTM D5185m		<b>19</b>	48	48
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>77</b>	80	78
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>31</b>	53	65
Calcium	ppm	ASTM D5185m		<b>2184</b>	2098	2126
Phosphorus	ppm	ASTM D5185m		<b>863</b>	1035	977
Zinc	ppm	ASTM D5185m		<b>1067</b>	1234	1192
Sulfur	ppm	ASTM D5185m		<b>3932</b>	4378	4217
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.7</b>	13.9	14.3
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>4.9</b>	5.6	6.6
Visc @ 100°C	cSt	ASTM D445	14.9	<b>▲ 12.4</b>	13.1	12.8



Certificate L2367

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

**Sample No.** : PE0004040

**Lab Number** : 06219078

**Unique Number** : 11097275

**Test Package** : CONST ( Additional Tests: FT-IR, FuelDilution, ICP, KV100, PercentFuel, SCREENING)

**Received** : 24 Jun 2024

**Tested** : 27 Jun 2024

**Diagnosed** : 27 Jun 2024 - Don Baldrige

**PetroCard - Aberdeen**

110 Commerce St

Aberdeen, WA

US 98520

Contact: Sean McNealley

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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)

T:

F: