



# OIL ANALYSIS REPORT

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

Area  
**TRUCK - URBAN**  
Machine Id  
**WESTERN STAR M141**  
Component  
**Diesel Engine**  
Fluid  
**SHELL Rotella T5 15W-40 (7 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PE0004034</b>	PE0004032	PE0003274
Sample Date		Client Info		<b>08 Jul 2024</b>	23 May 2024	05 Feb 2024
Machine Age	hrs	Client Info		<b>11098</b>	10762	9337
Oil Age	hrs	Client Info		<b>336</b>	1284	147
Filter Age	hrs	Client Info		<b>336</b>	1284	147
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>4</b>	17	6
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	4	5
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>330	<b>0</b>	2	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

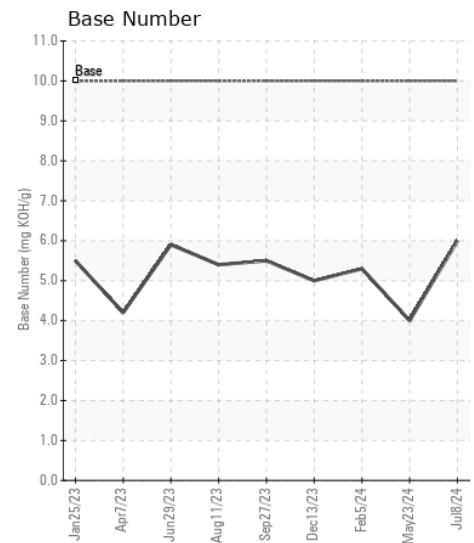
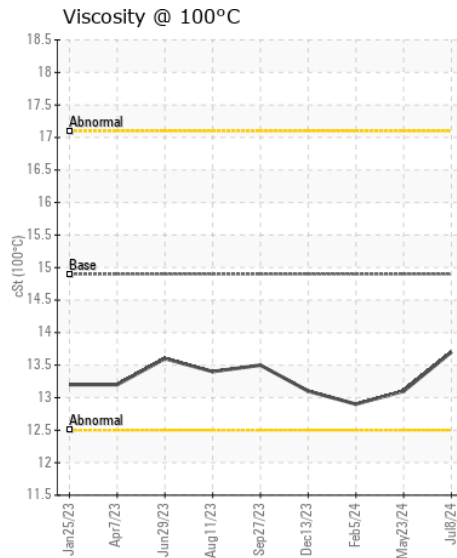
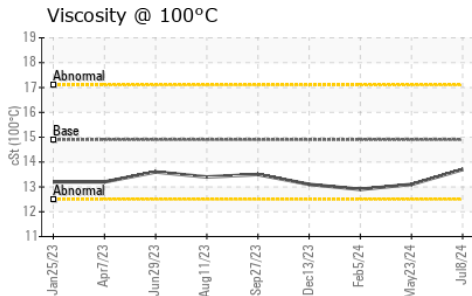
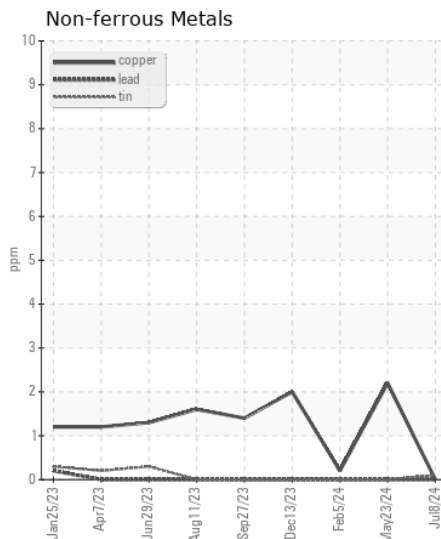
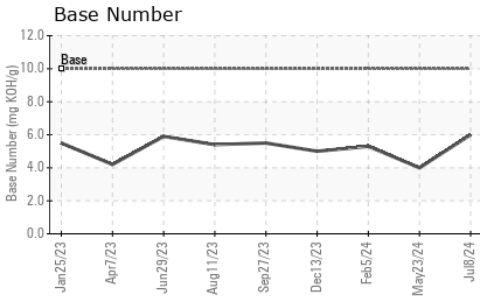
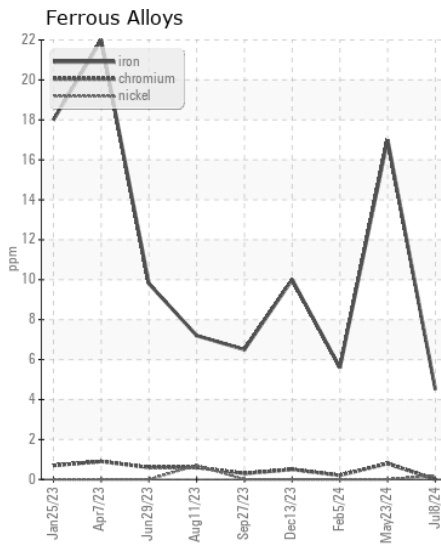
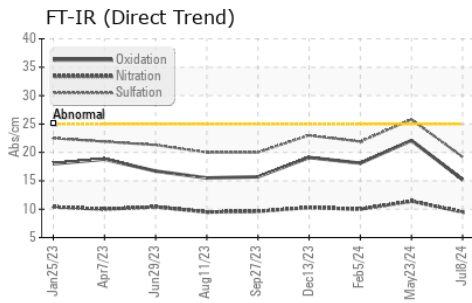
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>3</b>	4	2
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	4	8
Fuel		WC Method	>5	<b>&lt;1.0</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>0.2</b>	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.5</b>	11.4	10.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.2</b>	25.8	21.9
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 result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>4</b>	8	2
Boron	ppm	ASTM D5185m		<b>31</b>	18	29
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>80</b>	84	79
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>16</b>	17	16
Calcium	ppm	ASTM D5185m		<b>2171</b>	2370	1994
Phosphorus	ppm	ASTM D5185m		<b>1091</b>	1016	952
Zinc	ppm	ASTM D5185m		<b>1218</b>	1228	1149
Sulfur	ppm	ASTM D5185m		<b>4451</b>	3971	3363
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.2</b>	22.1	18.1
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>6.0</b>	4.0	5.3
Visc @ 100°C	cSt	ASTM D445	14.9	<b>13.7</b>	13.1	12.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PE0004034  
**Lab Number** : 06234692  
**Unique Number** : 11123526  
**Test Package** : CONST ( Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN )

**Received** : 12 Jul 2024  
**Tested** : 16 Jul 2024  
**Diagnosed** : 16 Jul 2024 - Sean Felton

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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