



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 7224**  
Component  
**Diesel Engine**  
Fluid  
**SHELL 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0928966</b>	WC0874126	WC0742500
Sample Date		Client Info		<b>11 May 2024</b>	08 Nov 2023	05 Jul 2023
Machine Age	mls	Client Info		<b>422731</b>	0	344141
Oil Age	mls	Client Info		<b>0</b>	0	0
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>65	<b>34</b>	26	68
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	1	3
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>35	<b>14</b>	9	23
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>180	<b>11</b>	7	11
Tin	ppm	ASTM D5185m	>8	<b>2</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>0</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 no indication of any contamination in the oil.

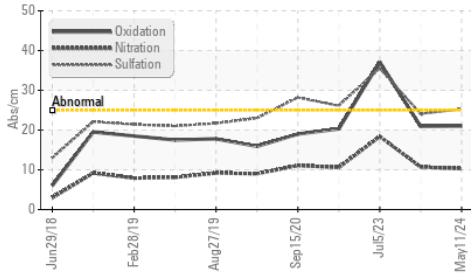
Silicon	ppm	ASTM D5185m	>15	<b>12</b>	7	11
Potassium	ppm	ASTM D5185m	>20	<b>6</b>	8	18
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.3</b>	1.2	2.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.3</b>	10.7	18.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>25.3</b>	24.1	35.5
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

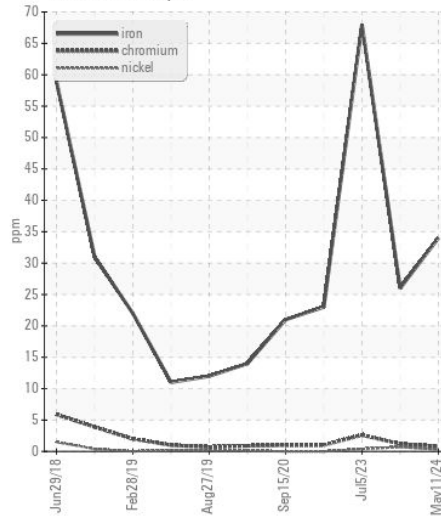
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>150	<b>3</b>	<1	3
Boron	ppm	ASTM D5185m		<b>43</b>	18	2
Barium	ppm	ASTM D5185m		<b>0</b>	1	0
Molybdenum	ppm	ASTM D5185m		<b>76</b>	66	79
Manganese	ppm	ASTM D5185m		<b>1</b>	<1	2
Magnesium	ppm	ASTM D5185m		<b>837</b>	960	1209
Calcium	ppm	ASTM D5185m		<b>1242</b>	1142	1411
Phosphorus	ppm	ASTM D5185m		<b>1031</b>	996	1288
Zinc	ppm	ASTM D5185m		<b>1341</b>	1244	1606
Sulfur	ppm	ASTM D5185m		<b>3194</b>	3140	3652
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.0</b>	20.9	37.1
Base Number (BN)	mg KOH/g	ASTM D2896		<b>5.9</b>	6.9	3.9
Visc @ 100°C	cSt	ASTM D445		<b>14.5</b>	14.7	16.5

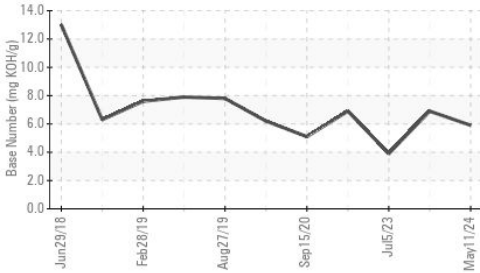
**FT-IR (Direct Trend)**



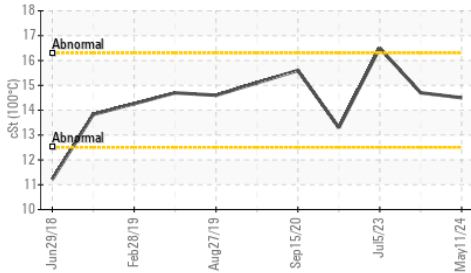
**Ferrous Alloys**



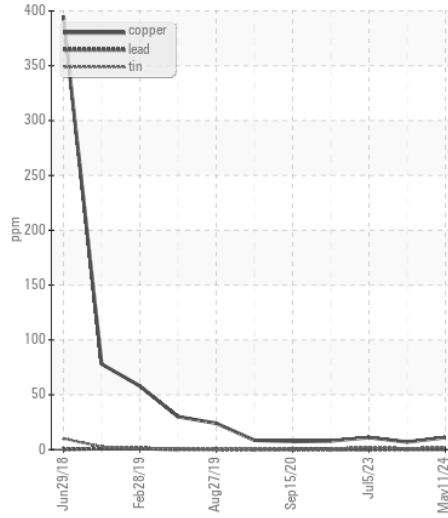
**Base Number**



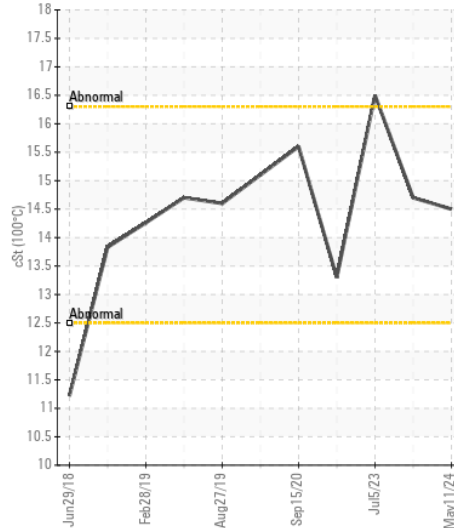
**Viscosity @ 100°C**



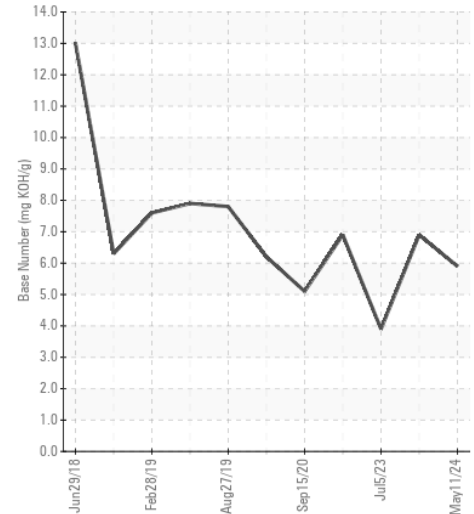
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0928966  
**Lab Number** : 06190080  
**Unique Number** : 11046832  
**Test Package** : FLEET

**Received** : 23 May 2024  
**Tested** : 28 May 2024  
**Diagnosed** : 28 May 2024 - Wes Davis

**SALEM NATIONALEASE CORPORATION**  
 198 PARK PLAZA DRIVE  
 WINSTON SALEM, NC  
 US 27105

Contact: Audrey Hopkins  
 Audrey.Hopkins@salemcorp.com

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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