



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 19950**  
Component  
**Diesel Engine**  
Fluid  
**SHELL 15W40 (48 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0906499</b>	WC0871976	WC0847852
Sample Date		Client Info		<b>08 Apr 2024</b>	15 Jan 2024	03 Nov 2023
Machine Age	mls	Client Info		<b>571222</b>	561068	536872
Oil Age	mls	Client Info		<b>11000</b>	24196	17000
Filter Age	mls	Client Info		<b>11000</b>	24196	17000
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	>65	<b>27</b>	20	13
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>3	<b>1</b>	<1	0
Titanium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>35	<b>11</b>	11	5
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m	>180	<b>3</b>	3	2
Tin	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	<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 no indication of any contamination in the oil.

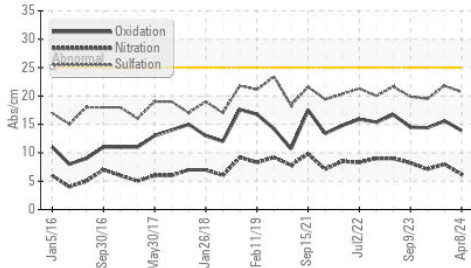
Silicon	ppm	ASTM D5185m	>15	<b>6</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	4	2
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.2</b>	8.0	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.7</b>	21.8	19.5
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

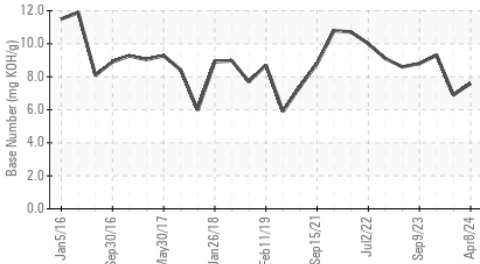
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>150	<b>3</b>	7	9
Boron	ppm	ASTM D5185m		<b>363</b>	242	4
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>92</b>	75	65
Manganese	ppm	ASTM D5185m		<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>359</b>	472	912
Calcium	ppm	ASTM D5185m		<b>1267</b>	1312	1105
Phosphorus	ppm	ASTM D5185m		<b>1046</b>	950	1008
Zinc	ppm	ASTM D5185m		<b>1164</b>	1140	1291
Sulfur	ppm	ASTM D5185m		<b>3486</b>	2854	3208
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.9</b>	15.6	14.4
Base Number (BN)	mg KOH/g	ASTM D2896		<b>7.6</b>	6.9	9.3
Visc @ 100°C	cSt	ASTM D445		<b>13.1</b>	13.6	13.0

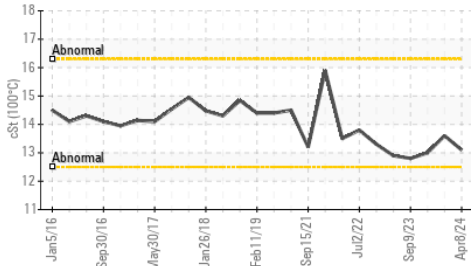
**FT-IR (Direct Trend)**



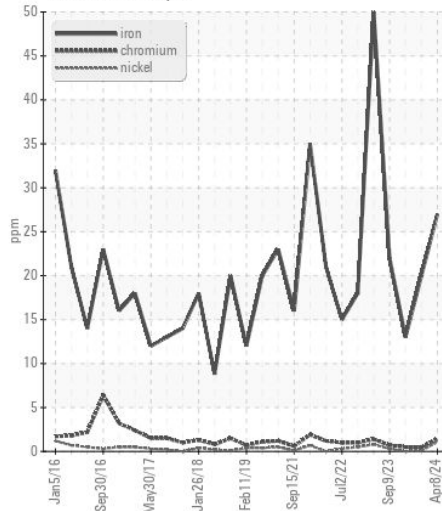
**Base Number**



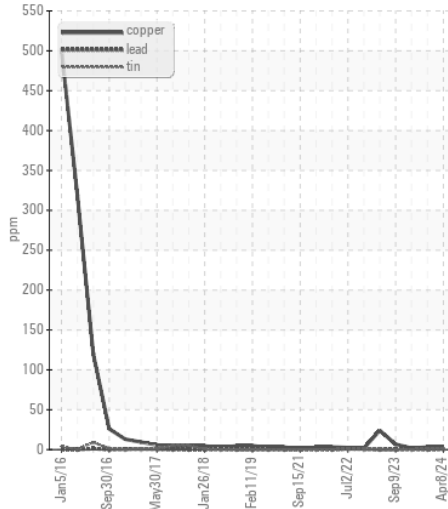
**Viscosity @ 100°C**



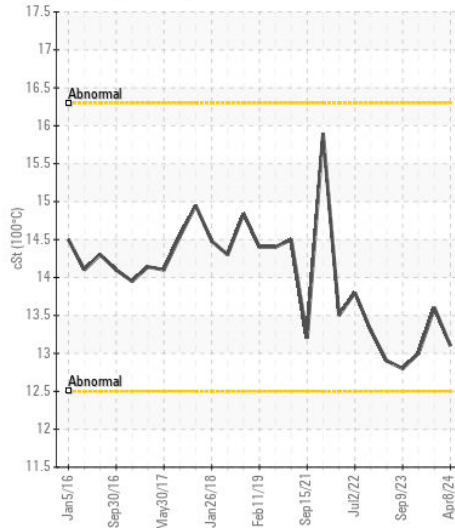
**Ferrous Alloys**



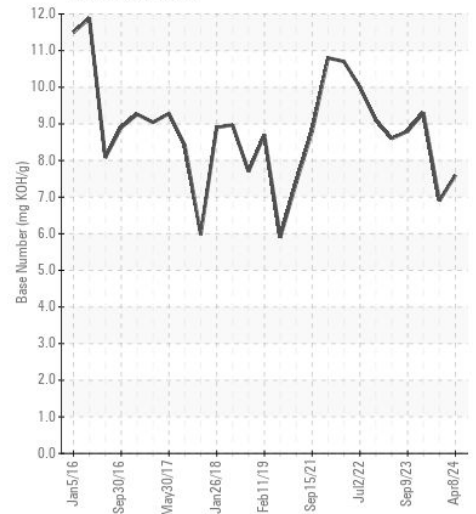
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0906499  
**Lab Number** : 06156711  
**Unique Number** : 10992134  
**Test Package** : FLEET

**Received** : 22 Apr 2024  
**Tested** : 23 Apr 2024  
**Diagnosed** : 23 Apr 2024 - Wes Davis

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

Contact: Audrey Hopkins  
 Audrey.Hopkins@salemcorp.com

T: (336)767-9642

F: x:

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)