



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 19947**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (48 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0946106</b>	WC0871937	WC0787887
Sample Date		Client Info		<b>25 Jun 2024</b>	26 Dec 2023	28 Apr 2023
Machine Age	mls	Client Info		<b>349715</b>	328878	298409
Oil Age	mls	Client Info		<b>22000</b>	18000	0
Filter Age	mls	Client Info		<b>22000</b>	18000	0
Oil Changed		Client Info		<b>Changed</b>	N/A	N/A
Filter Changed		Client Info		<b>Changed</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	<b>12</b>	12	6
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>6</b>	5	3
Lead	ppm	ASTM D5185m	>30	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>30	<b>6</b>	2	1
Tin	ppm	ASTM D5185m	>15	<b>0</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.

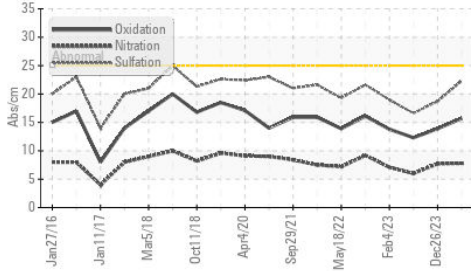
Silicon	ppm	ASTM D5185m	>30	<b>5</b>	5	3
Potassium	ppm	ASTM D5185m	>20	<b>6</b>	4	2
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.8</b>	7.7	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.3</b>	18.7	16.6
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

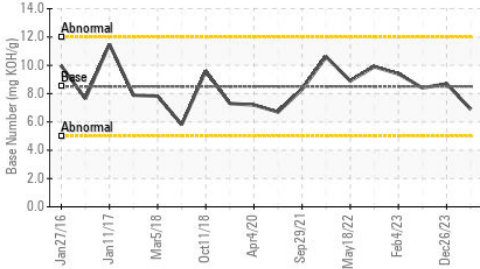
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	<b>&lt;1</b>	1	<1
Boron	ppm	ASTM D5185m	250	<b>222</b>	20	14
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>83</b>	68	69
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>462</b>	915	937
Calcium	ppm	ASTM D5185m	3000	<b>1321</b>	1137	1117
Phosphorus	ppm	ASTM D5185m	1150	<b>898</b>	1036	1038
Zinc	ppm	ASTM D5185m	1350	<b>1282</b>	1245	1281
Sulfur	ppm	ASTM D5185m	4250	<b>2901</b>	3176	3913
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.7</b>	13.9	12.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.9</b>	8.7	8.4
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.7</b>	12.4	12.6

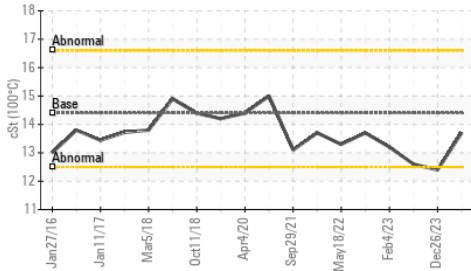
**FT-IR (Direct Trend)**



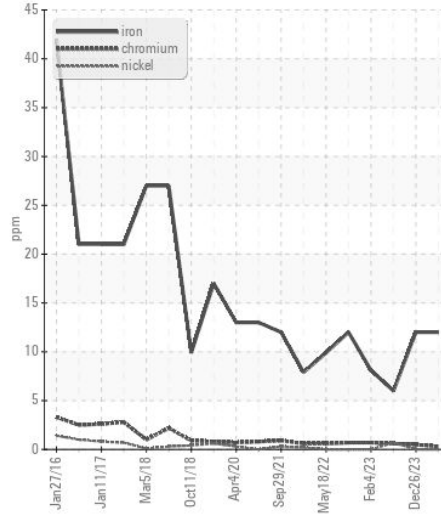
**Base Number**



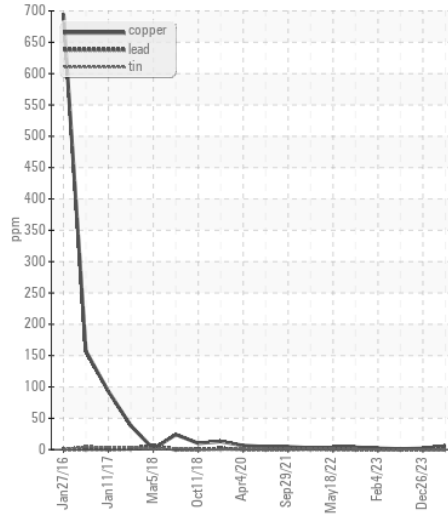
**Viscosity @ 100°C**



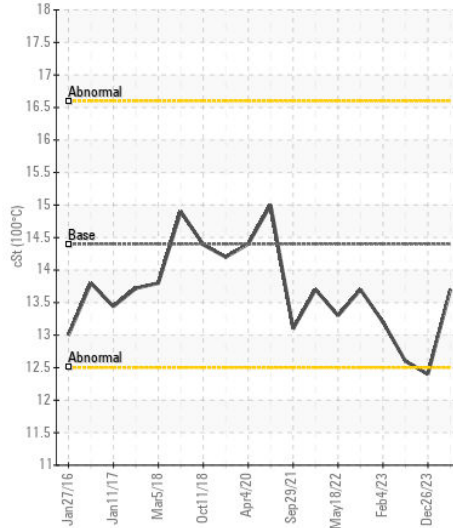
**Ferrous Alloys**



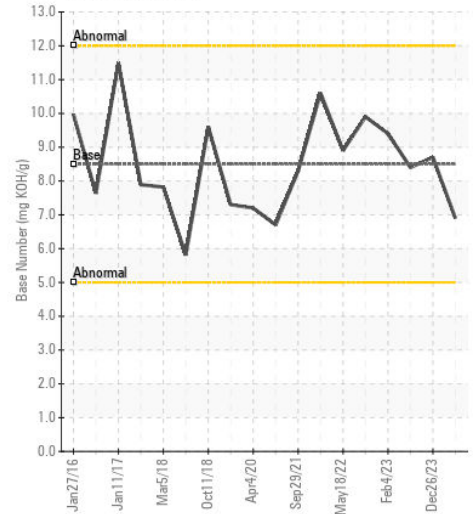
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0946106  
**Lab Number** : 06221024  
**Unique Number** : 11099221  
**Test Package** : FLEET

**Received** : 26 Jun 2024  
**Tested** : 27 Jun 2024  
**Diagnosed** : 27 Jun 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)