



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 19967**  
Component  
**Diesel Engine**  
Fluid  
**SHELL 15W40 (44 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0871938</b>	WC0871985	WC0847791
Sample Date		Client Info		<b>27 Dec 2023</b>	06 Nov 2023	18 Sep 2023
Machine Age	mls	Client Info		<b>498870</b>	486294	473252
Oil Age	mls	Client Info		<b>12582</b>	13042	17167
Filter Age	mls	Client Info		<b>12582</b>	13042	17167
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	>80	<b>5</b>	4	4
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>3</b>	2	4
Lead	ppm	ASTM D5185m	>30	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>150	<b>1</b>	1	2
Tin	ppm	ASTM D5185m	>5	<b>0</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

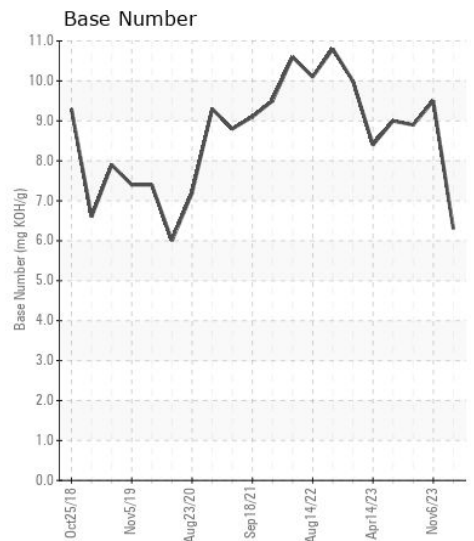
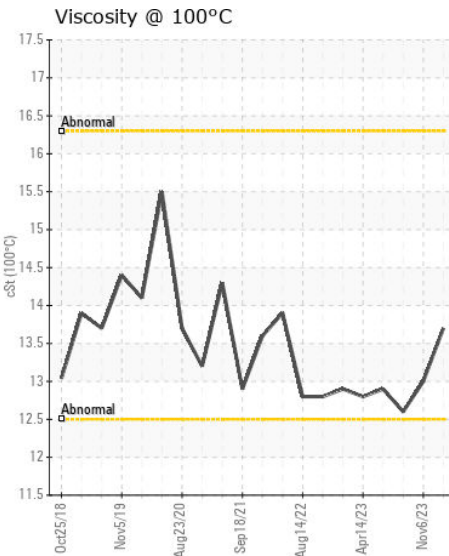
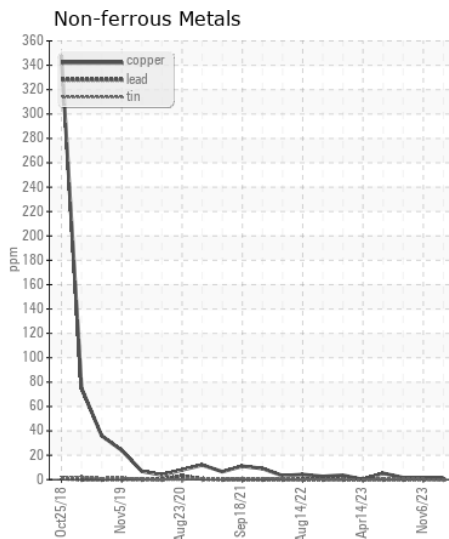
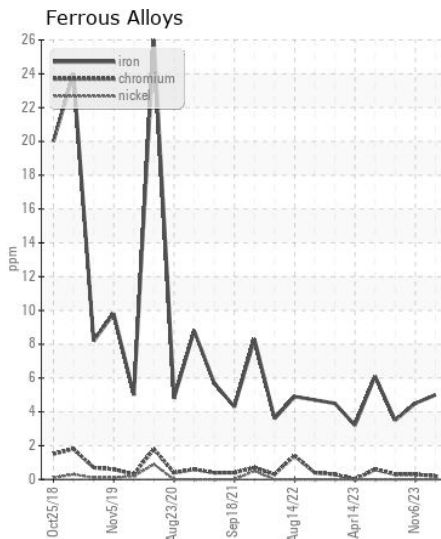
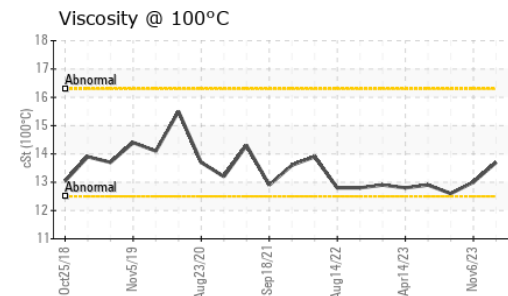
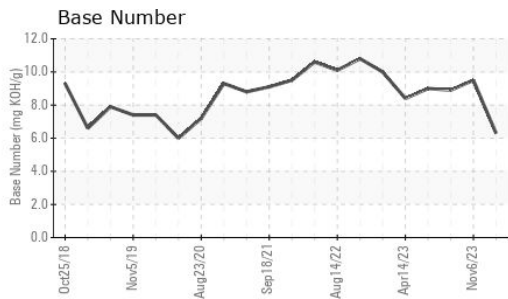
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>5</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	4	4
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>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.0</b>	6.0	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.1</b>	18.8	18.6
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	>150	<b>2</b>	<1	<1
Boron	ppm	ASTM D5185m		<b>356</b>	6	8
Barium	ppm	ASTM D5185m		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m		<b>81</b>	66	68
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>475</b>	941	887
Calcium	ppm	ASTM D5185m		<b>1288</b>	1105	1157
Phosphorus	ppm	ASTM D5185m		<b>1070</b>	1022	1007
Zinc	ppm	ASTM D5185m		<b>1273</b>	1310	1217
Sulfur	ppm	ASTM D5185m		<b>3333</b>	3287	3154
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.2</b>	13.7	13.6
Base Number (BN)	mg KOH/g	ASTM D2896		<b>6.3</b>	9.5	8.9
Visc @ 100°C	cSt	ASTM D445		<b>13.7</b>	13.0	12.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0871938 **Received** : 18 Jan 2024  
**Lab Number** : 06064868 **Diagnosed** : 19 Jan 2024  
**Unique Number** : 10836250 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

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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)