



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 676**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (17 QTS)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0870664</b>	WC0527406	WCM1193238
Sample Date		Client Info		<b>18 Dec 2023</b>	23 Nov 2020	11 Jun 2010
Machine Age	mls	Client Info		<b>249236</b>	0	34342
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>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>▲ 159</b>	43	11
Chromium	ppm	ASTM D5185m	>20	<b>3</b>	1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	1	0
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>11</b>	7	3
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	2
Copper	ppm	ASTM D5185m	>330	<b>4</b>	<1	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	0
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.

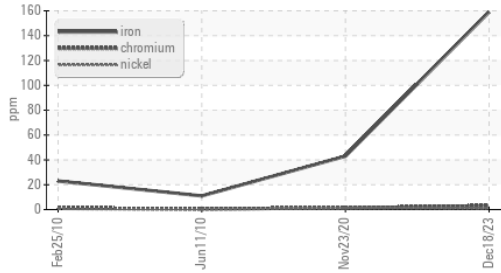
Silicon	ppm	ASTM D5185m	>25	<b>22</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	6	0
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>6	<b>2</b>	0.7	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.5</b>	11.1	4.
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.6</b>	19.8	14.
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

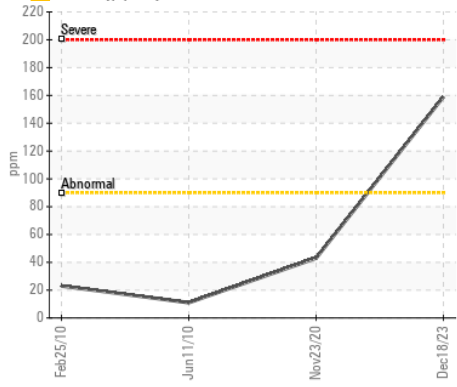
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>158	<b>14</b>	10	2
Boron	ppm	ASTM D5185m	250	<b>26</b>	39	3
Barium	ppm	ASTM D5185m	10	<b>4</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>92</b>	84	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>29</b>	97	25
Calcium	ppm	ASTM D5185m	3000	<b>2097</b>	2296	2289
Phosphorus	ppm	ASTM D5185m	1150	<b>955</b>	1037	997
Zinc	ppm	ASTM D5185m	1350	<b>1145</b>	1186	1168
Sulfur	ppm	ASTM D5185m	4250	<b>3702</b>	3016	3688
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.8</b>	14.6	12.
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>6.8</b>	7.5	---
Visc @ 100°C	cSt	ASTM D445	14.4	<b>15.2</b>	14.6	14.11

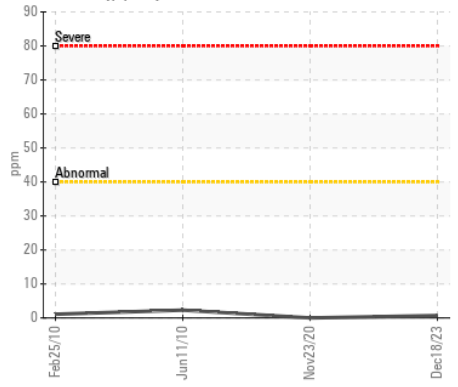
▲ Ferrous Alloys



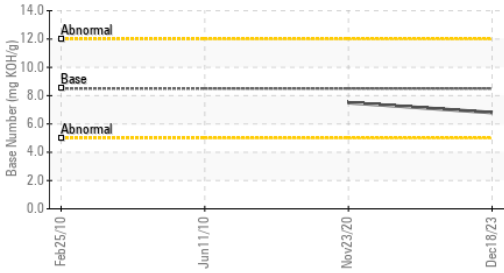
▲ Iron (ppm)



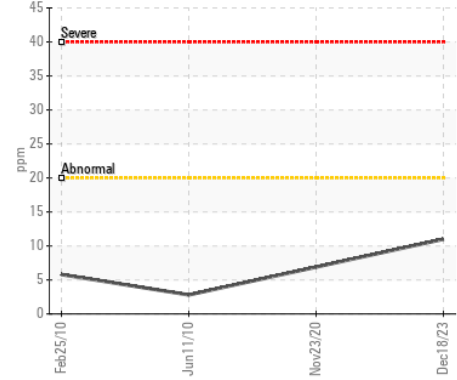
Lead (ppm)



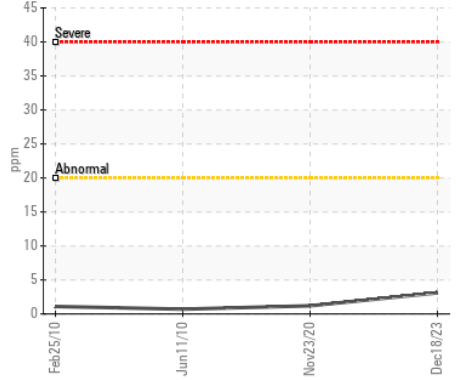
Base Number



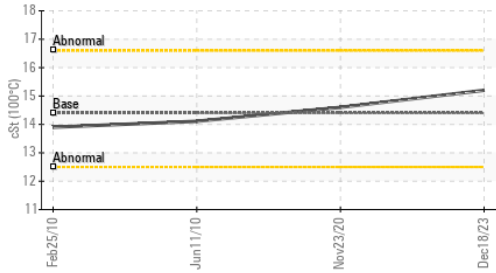
Aluminum (ppm)



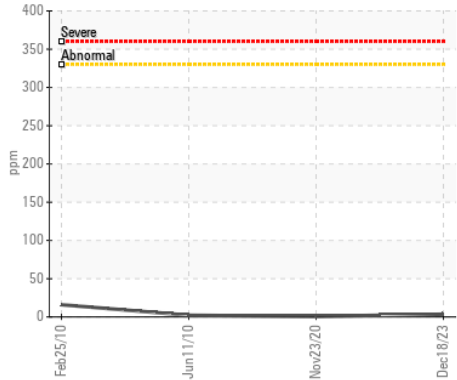
Chromium (ppm)



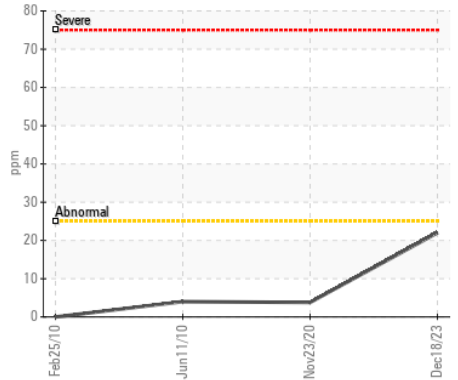
Viscosity @ 100°C



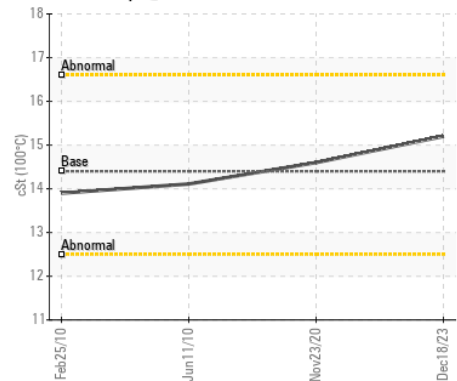
Copper (ppm)



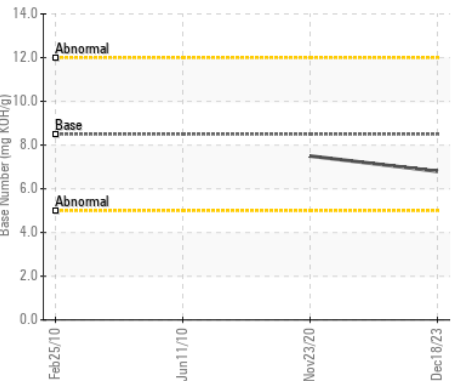
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0870664 **Received** : 12 Jan 2024  
**Lab Number** : 06059826 **Diagnosed** : 16 Jan 2024  
**Unique Number** : 10831208 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**WAKE COUNTY PUBLIC SCHOOL SYSTEM**  
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 US 27610  
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 T: (919)856-8076  
 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)