OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 4593
Component
Diesel Engine
Fluid
SHELL 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

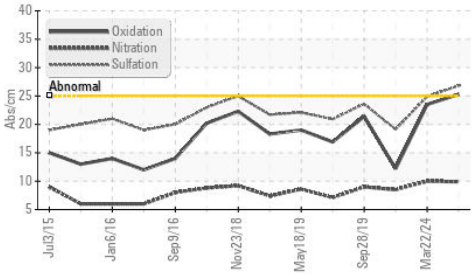
There is no indication of any contamination in the oil.

FLUID CONDITION

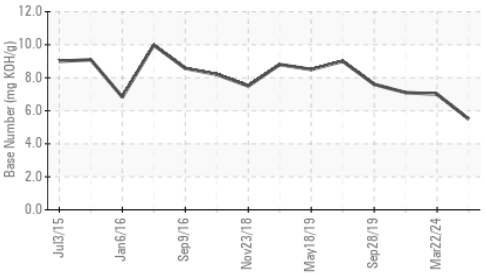
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**WC0936772**	WC0915975	WC0409655
Sample Date		Client Info		**10 Jul 2024**	22 Mar 2024	23 Nov 2019
Machine Age	mls	Client Info		**285745**	278036	212851
Oil Age	mls	Client Info		**7709**	6562	10000
Filter Age	mls	Client Info		**7709**	6562	10000
Oil Changed		Client Info		**N/A**	Changed	Changed
Filter Changed		Client Info		**N/A**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>80	**29**	17	8
Chromium	ppm	ASTM D5185m	>5	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>3	**<1**	0	0
Aluminum	ppm	ASTM D5185m	>30	**5**	5	3
Lead	ppm	ASTM D5185m	>30	**0**	<1	<1
Copper	ppm	ASTM D5185m	>150	**2**	2	<1
Tin	ppm	ASTM D5185m	>5	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	**8**	7	6
Potassium	ppm	ASTM D5185m	>20	**6**	3	7
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	*ASTM D7844	>3	**0.4**	0.2	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**9.9**	10.0	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.8**	24.9	19.1
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Sodium	ppm	ASTM D5185m	>150	**2**	0	2
Boron	ppm	ASTM D5185m		**165**	239	12
Barium	ppm	ASTM D5185m		**0**	<1	0
Molybdenum	ppm	ASTM D5185m		**94**	120	4
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**421**	668	33
Calcium	ppm	ASTM D5185m		**1440**	1469	2432
Phosphorus	ppm	ASTM D5185m		**978**	746	878
Zinc	ppm	ASTM D5185m		**1194**	863	1051
Sulfur	ppm	ASTM D5185m		**2910**	2561	2733
Oxidation	Abs/.1mm	*ASTM D7414	>25	**25.3**	23.5	12.2
Base Number (BN)	mg KOH/g	ASTM D2896		**5.5**	7.0	7.1
Visc @ 100°C	cSt	ASTM D445		**13.8**	13.2	14.5

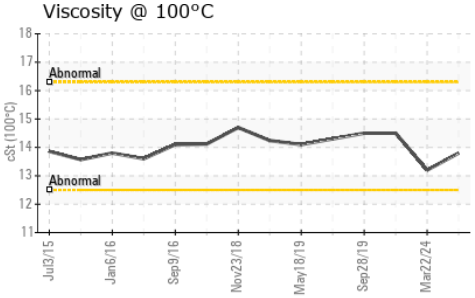
FT-IR (Direct Trend)



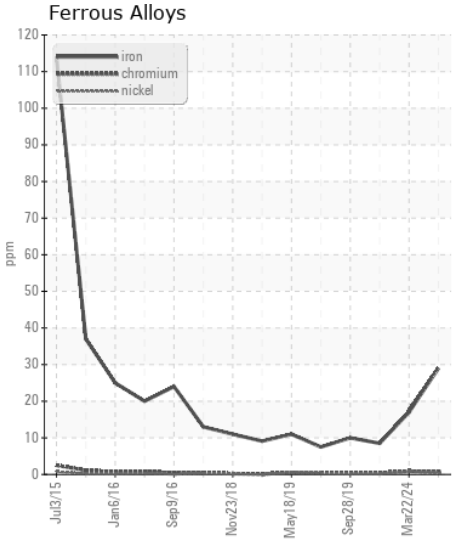
Base Number



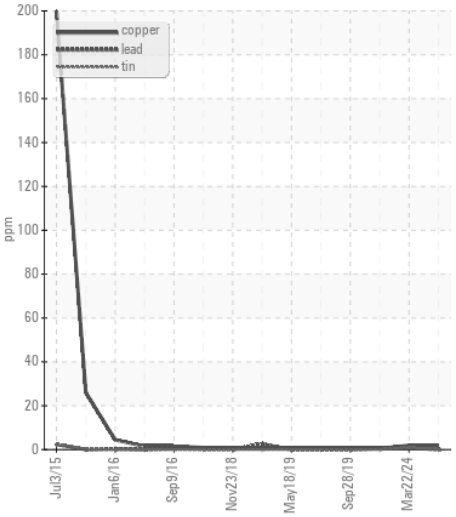
Viscosity @ 100°C



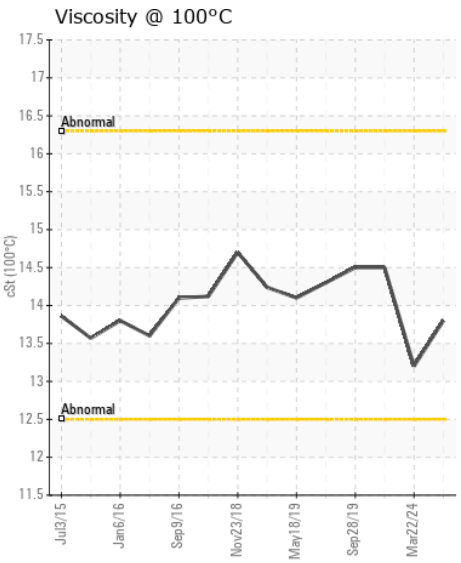
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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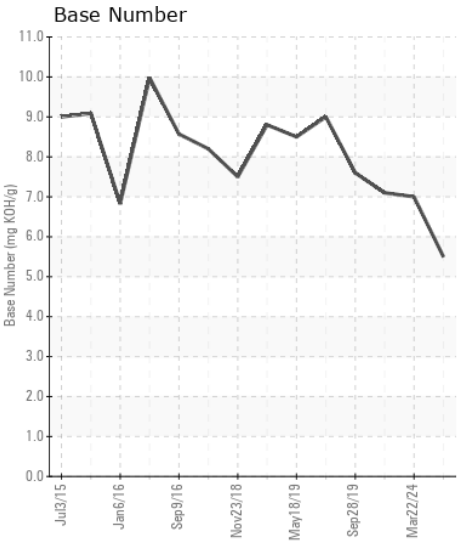

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0936772
Lab Number : 06238738
Unique Number : 11127572
Test Package : FLEET

Received : 16 Jul 2024
Tested : 17 Jul 2024
Diagnosed : 18 Jul 2024 - Sean Felton

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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