OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
FREIGHTLINER 45919
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W40 (--- QTS)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

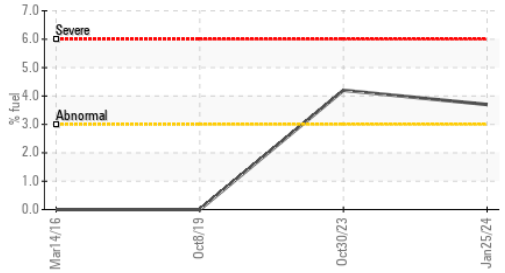
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

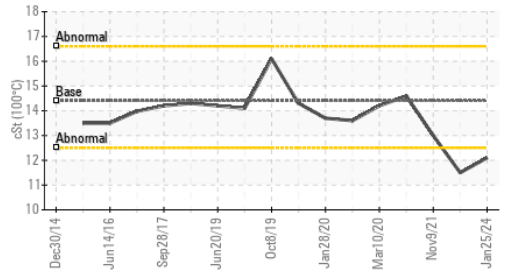
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**WC0882296**	WC0838123	WC0634760
Sample Date		Client Info		**25 Jan 2024**	30 Oct 2023	09 Nov 2021
Machine Age	hrs	Client Info		**305083**	292683	210296
Oil Age	hrs	Client Info		**25000**	0	25000
Filter Age	hrs	Client Info		**25000**	0	25000
Oil Changed		Client Info		**Changed**	N/A	N/A
Filter Changed		Client Info		**Changed**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL
Iron	ppm	ASTM D5185m	>90	**21**	26	39
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**8**	3	12
Lead	ppm	ASTM D5185m	>40	**0**	<1	<1
Copper	ppm	ASTM D5185m	>330	**1**	1	6
Tin	ppm	ASTM D5185m	>15	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	**5**	6	5
Potassium	ppm	ASTM D5185m	>20	**5**	3	<1
Fuel	%	ASTM D3524	>3.0	▲ **3.7**	▲ 4.2	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	*ASTM D7844	>6	**0.4**	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**10.1**	9.8	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**25.8**	24.7	21.3
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	>44	**0**	0	<1
Boron	ppm	ASTM D5185m	250	**185**	3	5
Barium	ppm	ASTM D5185m	10	**<1**	5	0
Molybdenum	ppm	ASTM D5185m	100	**117**	60	62
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**655**	855	933
Calcium	ppm	ASTM D5185m	3000	**1455**	1069	1158
Phosphorus	ppm	ASTM D5185m	1150	**709**	1003	1047
Zinc	ppm	ASTM D5185m	1350	**916**	1159	1188
Sulfur	ppm	ASTM D5185m	4250	**2515**	3189	2749
Oxidation	Abs/.1mm	*ASTM D7414	>25	**24.7**	26.2	18
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**7.1**	6.2	8.9
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **12.1**	▲ 11.5	13.0

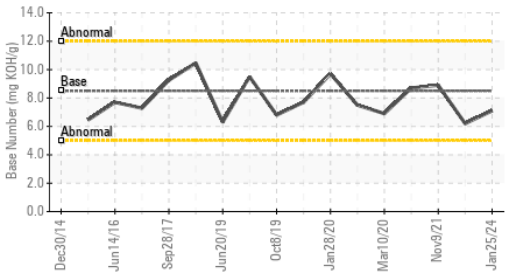
Fuel Dilution



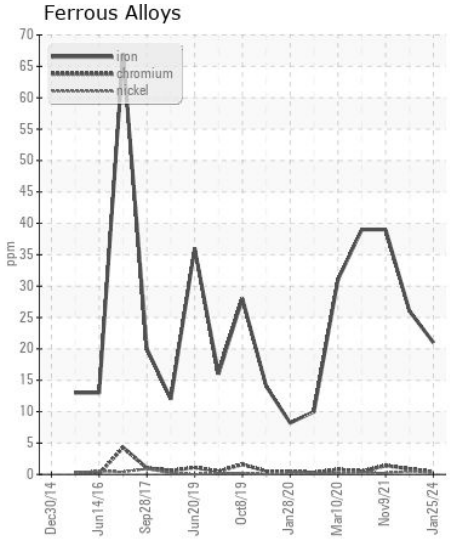
Viscosity @ 100°C



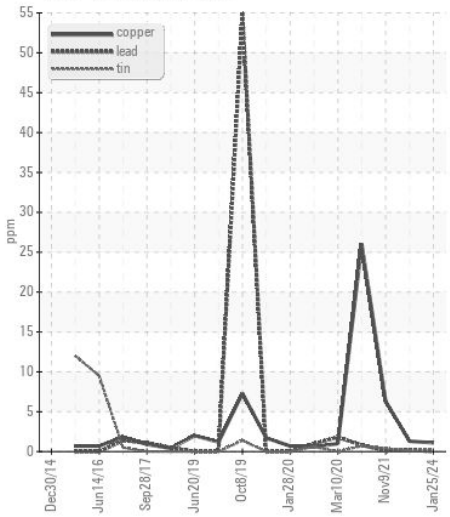
Base Number



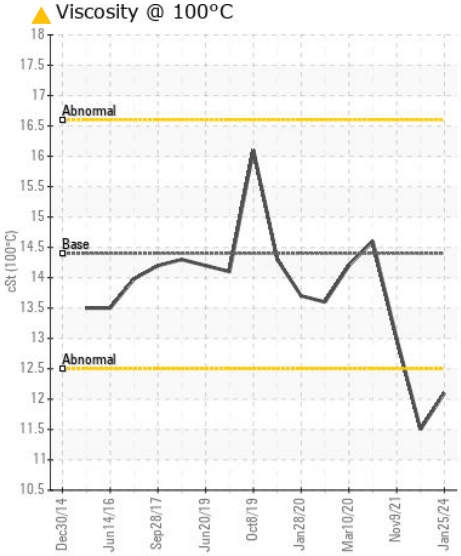
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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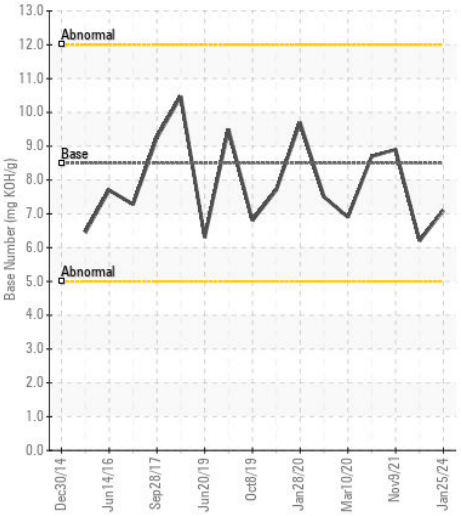

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0882296 **Recieved** : 01 Feb 2024
Lab Number : 06077552 **Diagnosed** : 05 Feb 2024
Unique Number : 10859643 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

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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