OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER 13269
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The iron level has decreased, but is still abnormal. All other component wear rates are normal.

CONTAMINATION

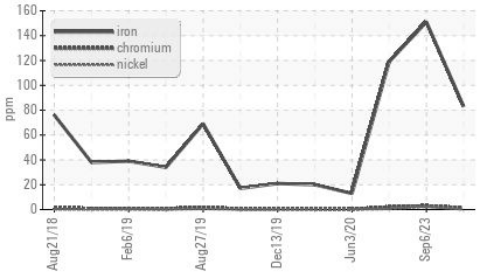
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. No other contaminants were detected in the oil.

FLUID CONDITION

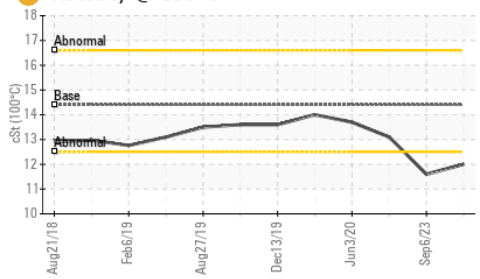
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0912576	WC0838649	WC0777187
Sample Date		Client Info		19 Mar 2024	06 Sep 2023	03 Mar 2023
Machine Age	mls	Client Info		145595	0	0
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	N/A
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>80	▲ 83	▲ 151	▲ 119
Chromium	ppm	ASTM D5185m	>5	1	3	2
Nickel	ppm	ASTM D5185m	>2	0	2	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	61	84	▲ 38
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>150	8	10	27
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	10	13	19
Potassium	ppm	ASTM D5185m	>20	88	91	19
Fuel	%	ASTM D3524	>5	<1.0	1.6	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	11.3	8.6	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	18.5	17.5
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	>158	4	7	9
Boron	ppm	ASTM D5185m	250	9	21	92
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	69	63	69
Manganese	ppm	ASTM D5185m		1	1	2
Magnesium	ppm	ASTM D5185m	450	916	774	129
Calcium	ppm	ASTM D5185m	3000	1149	1166	1992
Phosphorus	ppm	ASTM D5185m	1150	1098	1024	961
Zinc	ppm	ASTM D5185m	1350	1259	1222	1255
Sulfur	ppm	ASTM D5185m	4250	3798	3189	4415
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.0	15.4	12.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.4	9.3	8.8
Visc @ 100°C	cSt	ASTM D445	14.4	12.0	11.6	13.1

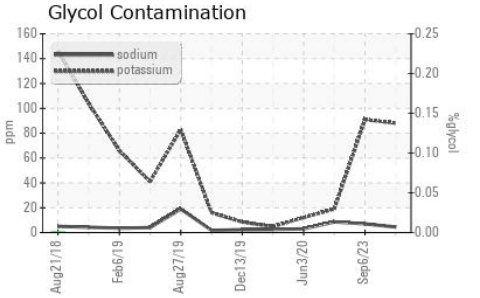
Ferrous Alloys



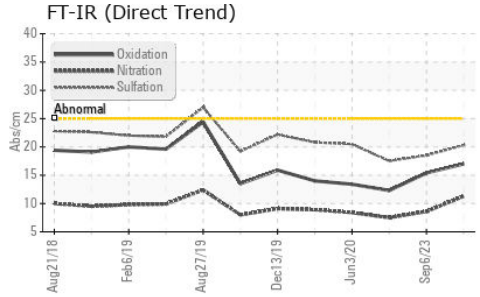
Viscosity @ 100°C



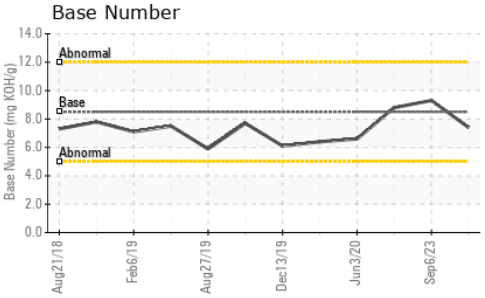
Glycol Contamination



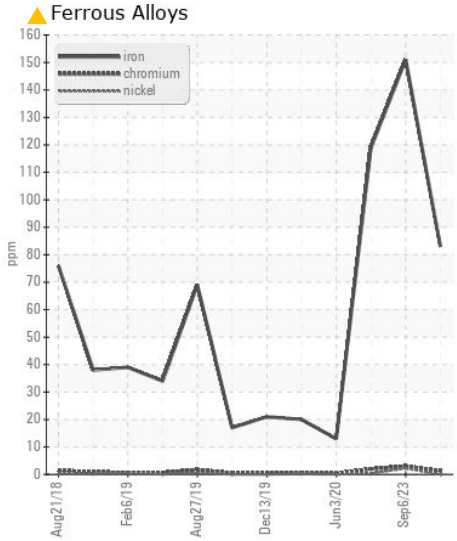
FT-IR (Direct Trend)



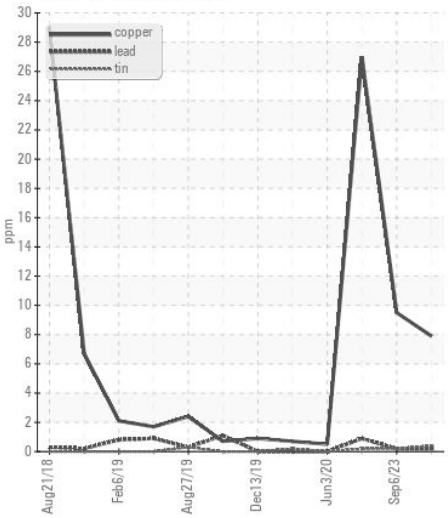
Base Number



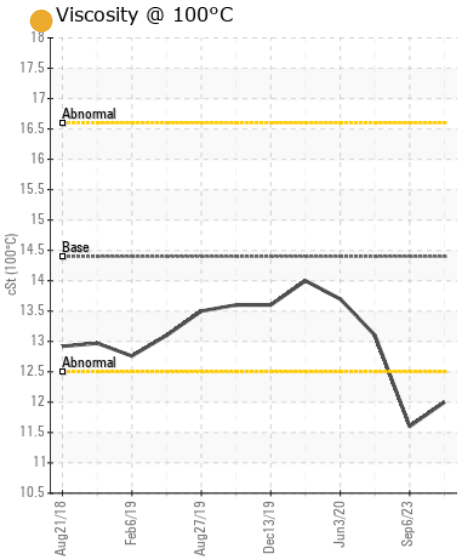
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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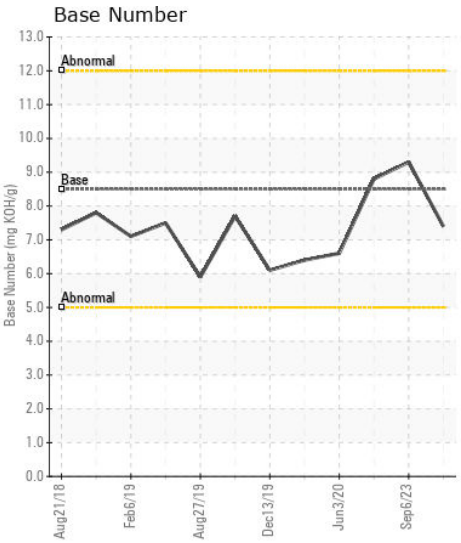

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0912576
Lab Number : 06153670
Unique Number : 10983748
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 18 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Don Baldridge

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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