OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
FREIGHTLINER 45374
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W40 (28 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. 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

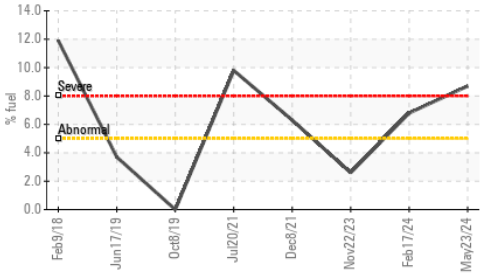
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

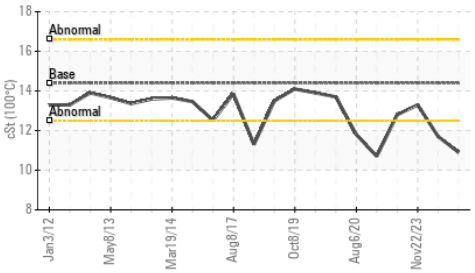
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0915931	WC0904373	WC0882309
Sample Date		Client Info		23 May 2024	17 Feb 2024	22 Nov 2023
Machine Age	mls	Client Info		321573	314795	304035
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>80	29	44	▲ 117
Chromium	ppm	ASTM D5185m	>5	<1	1	2
Nickel	ppm	ASTM D5185m	>2	0	<1	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	4	6	4
Lead	ppm	ASTM D5185m	>30	0	1	0
Copper	ppm	ASTM D5185m	>150	<1	<1	2
Tin	ppm	ASTM D5185m	>5	<1	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	6	7	10
Potassium	ppm	ASTM D5185m	>20	1	4	5
Fuel	%	ASTM D3524	>5	▲ 8.7	▲ 6.8	▲ 2.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.4	0.8
Nitration	Abs/cm	*ASTM D7624	>20	9.6	10.7	12.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.4	24.4	25.9
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	1	2	<1
Boron	ppm	ASTM D5185m	250	250	189	4
Barium	ppm	ASTM D5185m	10	0	0	5
Molybdenum	ppm	ASTM D5185m	100	102	▲ 108	80
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m	450	527	720	1015
Calcium	ppm	ASTM D5185m	3000	1335	1561	1203
Phosphorus	ppm	ASTM D5185m	1150	774	780	1085
Zinc	ppm	ASTM D5185m	1350	892	962	1362
Sulfur	ppm	ASTM D5185m	4250	2720	2347	3218
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.5	22.7	24.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.5	6.7	6.0
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 10.9	▲ 11.7	13.3

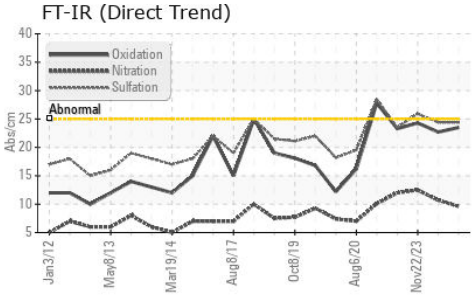
Fuel Dilution



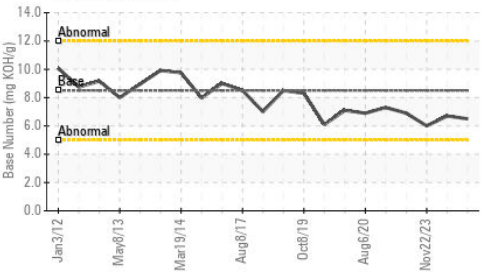
Viscosity @ 100°C



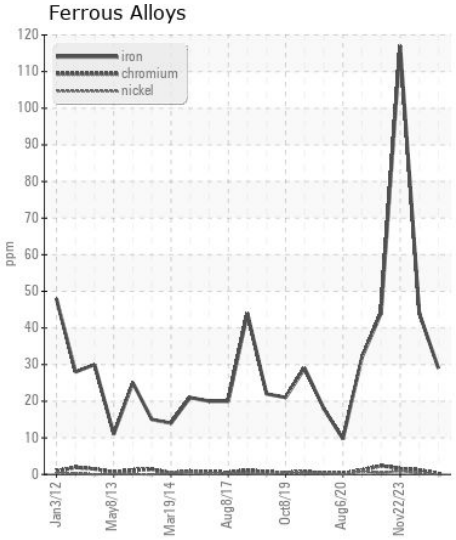
FT-IR (Direct Trend)



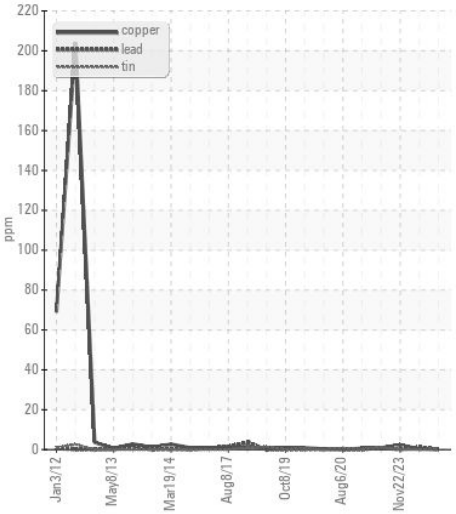
Base Number



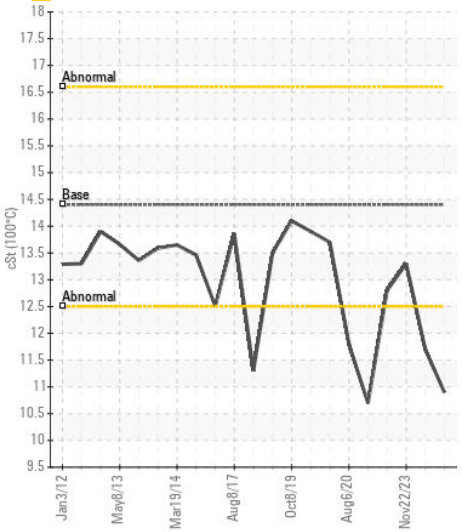
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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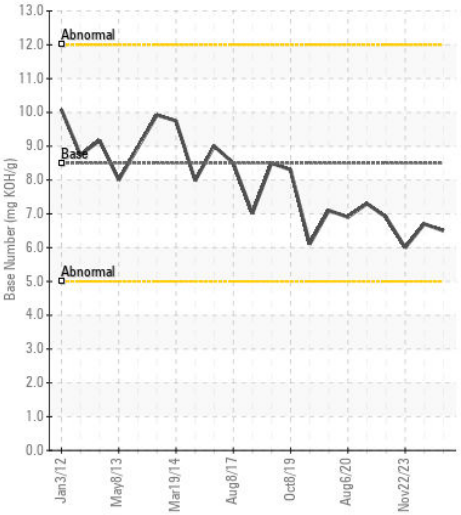

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0915931
Lab Number : 06196461
Unique Number : 11058584
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 31 May 2024
Tested : 05 Jun 2024
Diagnosed : 05 Jun 2024 - Wes Davis

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)

SALEM NATIONALEASE CORPORATION
198 PARK PLAZA DRIVE
WINSTON SALEM, NC
US 27105
Contact: Audrey Hopkins
Audrey.Hopkins@salemcorp.com
T: (336)767-9642
F: x: