



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 13
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		WC0870767	WC0772872	WC0729859
Sample Date		Client Info		29 Jan 2024	03 Jan 2023	20 Sep 2022
Machine Age	mls	Client Info		219132	204136	199165
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ATTENTION	SEVERE	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	18	85	41
Chromium	ppm	ASTM D5185m	>20	1	5	1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	10	8
Lead	ppm	ASTM D5185m	>40	0	4	2
Copper	ppm	ASTM D5185m	>330	<1	4	6
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

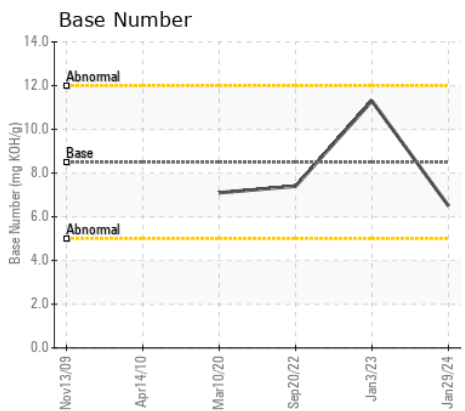
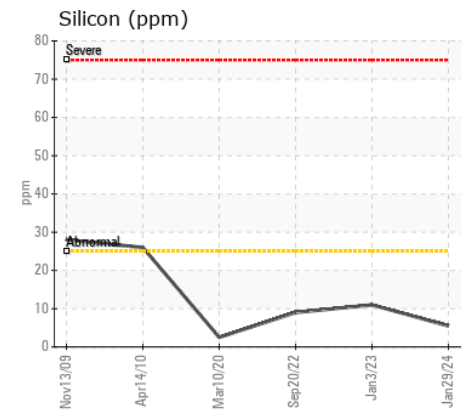
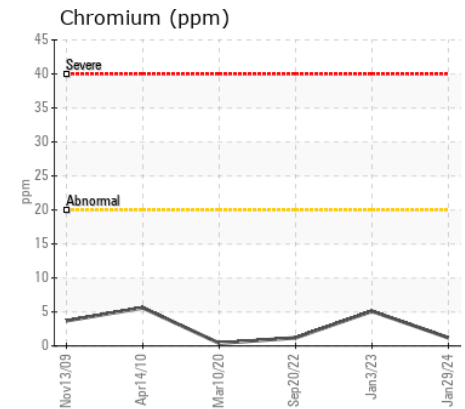
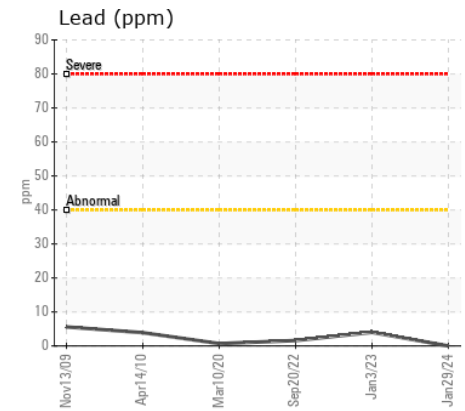
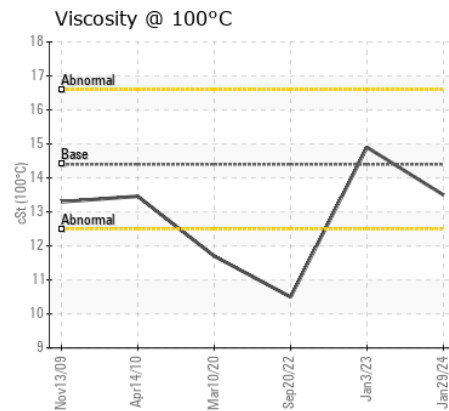
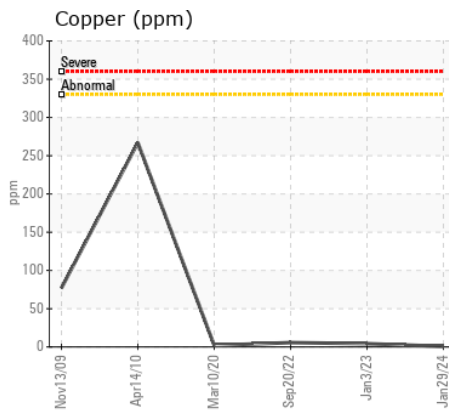
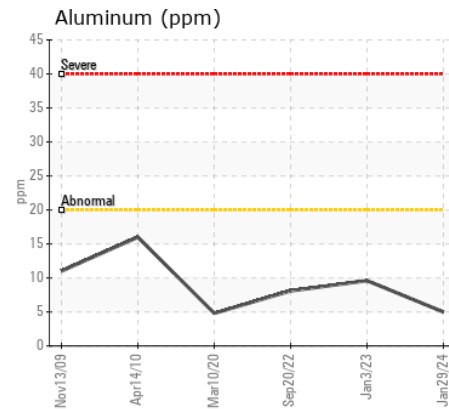
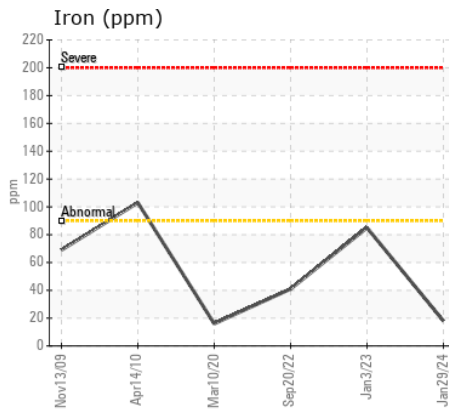
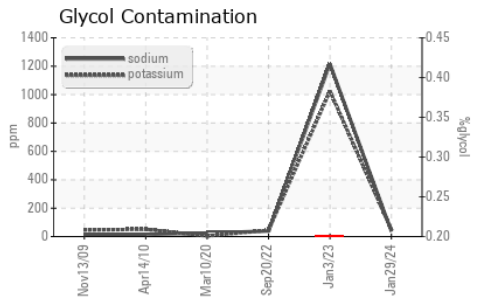
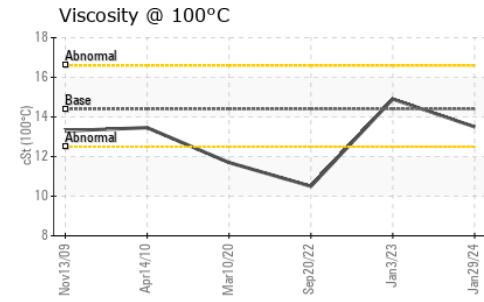
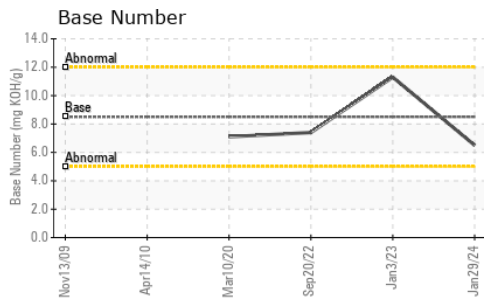
Sodium and/or potassium levels remain elevated. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>25	6	11	9
Potassium	ppm	ASTM D5185m	>20	49	1025	44
Fuel		WC Method	>3.0	<1.0	0.3	11.8
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	0.20	NEG
Soot %	%	*ASTM D7844	>6	0.5	1	0.8
Nitration	Abs/cm	*ASTM D7624	>20	9.9	15.9	14.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.3	24.7	23.9
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

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.

Sodium	ppm	ASTM D5185m	>158	38	1216	39
Boron	ppm	ASTM D5185m	250	36	29	20
Barium	ppm	ASTM D5185m	10	0	2	2
Molybdenum	ppm	ASTM D5185m	100	93	149	79
Manganese	ppm	ASTM D5185m		0	1	<1
Magnesium	ppm	ASTM D5185m	450	127	43	63
Calcium	ppm	ASTM D5185m	3000	2075	2131	1901
Phosphorus	ppm	ASTM D5185m	1150	1064	980	876
Zinc	ppm	ASTM D5185m	1350	1280	1245	1056
Sulfur	ppm	ASTM D5185m	4250	4052	4279	3693
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.8	17.2	18.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.5	11.3	7.4
Visc @ 100°C	cSt	ASTM D445	14.4	13.5	14.9	10.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0870767

Lab Number : 06104813

Unique Number : 10903043

Test Package : MOB 1 (Additional Tests: TBN)

Received : 29 Feb 2024

Tested : 05 Mar 2024

Diagnosed : 05 Mar 2024 - Jonathan Hester

WAKE COUNTY PUBLIC SCHOOL SYSTEM

1551 ROCK QUARRY ROAD

RALEIGH, NC

US 27610

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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)