



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER 4
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (15 QTS)

RECOMMENDATION

We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0932841	WC0792911	WC0743032
Sample Date		Client Info		13 Jun 2024	22 Mar 2023	28 Sep 2022
Machine Age	mls	Client Info		279090	259177	248796
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				SEVERE	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	45	11	45
Chromium	ppm	ASTM D5185m	>20	1	<1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	4	12
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	11	0	52
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

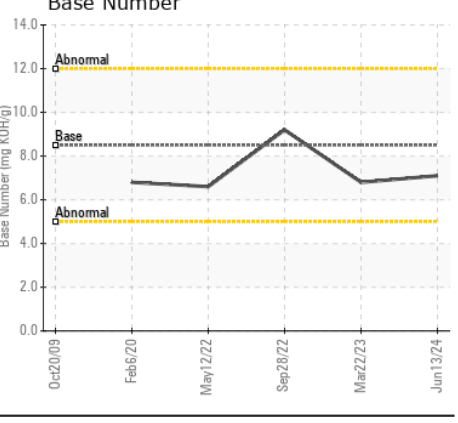
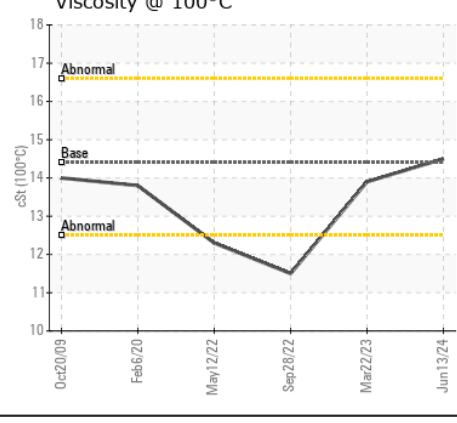
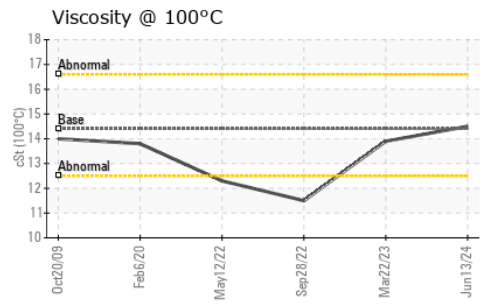
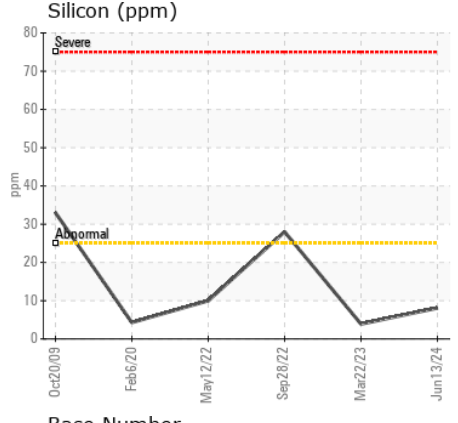
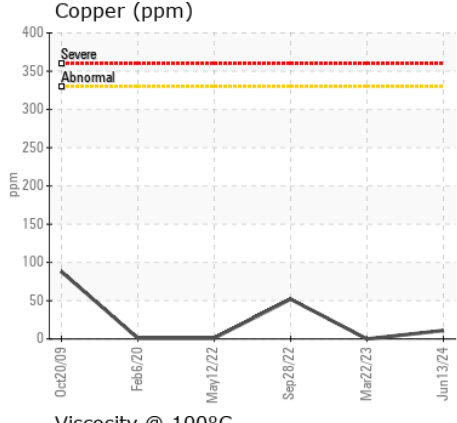
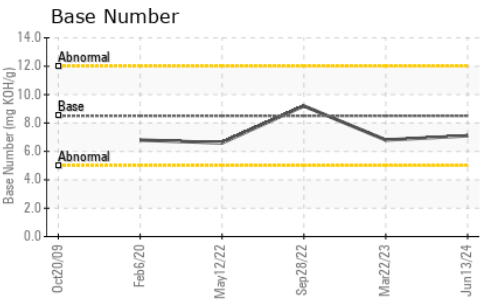
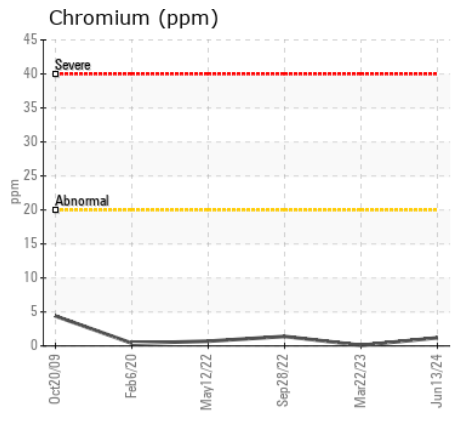
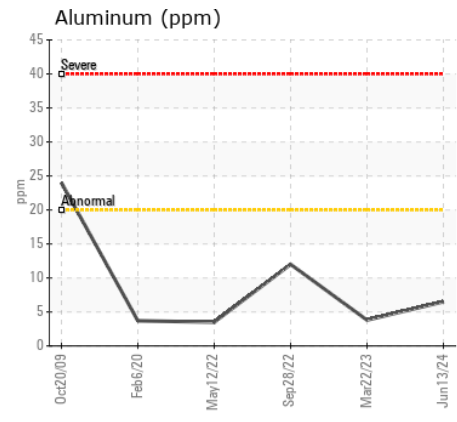
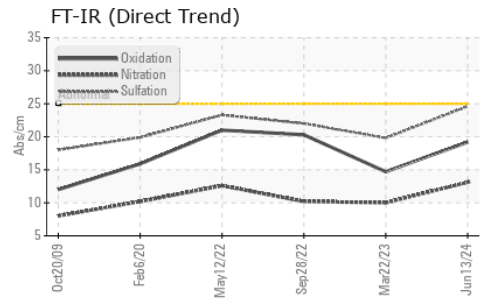
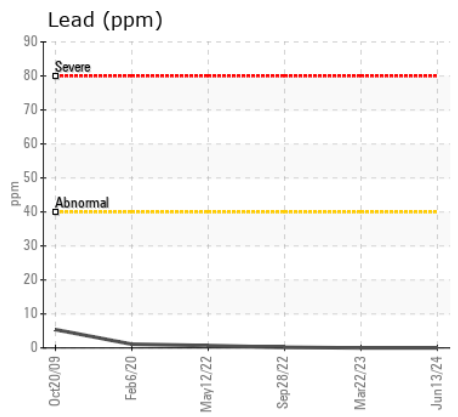
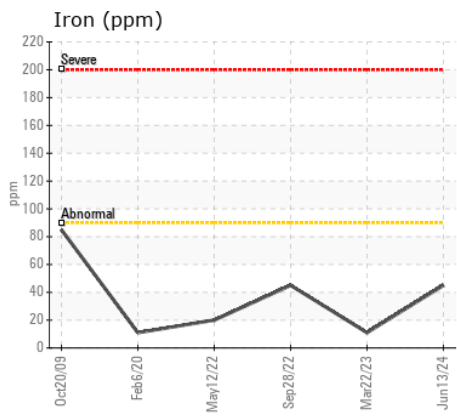
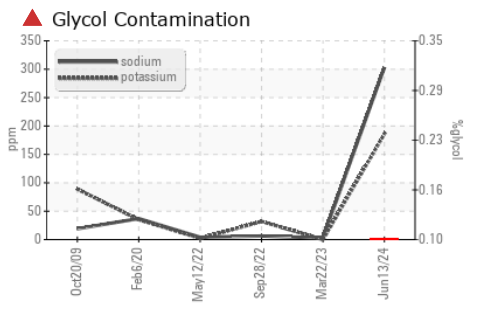
Test for glycol is positive. There is a high concentration of glycol present in the oil.

Silicon	ppm	ASTM D5185m	>25	8	4	28
Potassium	ppm	ASTM D5185m	>20	186	<1	32
Fuel		WC Method	>3.0	<1.0	<1.0	2.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		0.10	NEG	NEG
Soot %	%	*ASTM D7844	>6	1.3	0.8	0.3
Nitration	Abs/cm	*ASTM D7624	>20	13.1	10.0	10.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.6	19.8	22.0
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>158	303	3	6
Boron	ppm	ASTM D5185m	250	19	43	43
Barium	ppm	ASTM D5185m	10	0	0	11
Molybdenum	ppm	ASTM D5185m	100	121	88	53
Manganese	ppm	ASTM D5185m		0	<1	6
Magnesium	ppm	ASTM D5185m	450	175	76	756
Calcium	ppm	ASTM D5185m	3000	2064	2267	1260
Phosphorus	ppm	ASTM D5185m	1150	965	1044	751
Zinc	ppm	ASTM D5185m	1350	1292	1331	927
Sulfur	ppm	ASTM D5185m	4250	3383	4358	2932
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.2	14.7	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.1	6.8	9.2
Visc @ 100°C	cSt	ASTM D445	14.4	14.5	13.9	11.5



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0932841 **Received** : 26 Jun 2024
Lab Number : 06220930 **Tested** : 28 Jun 2024
Unique Number : 11099127 **Diagnosed** : 28 Jun 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

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Certificate L2367
 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)