



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION

Machine Id
FREIGHTLINER 1840
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- 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		WC0948988	WC0906129	---
Sample Date		Client Info		13 Jun 2024	23 Feb 2024	---
Machine Age	mls	Client Info		10357	3972	---
Oil Age	mls	Client Info		0	0	---
Filter Age	mls	Client Info		0	0	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		N/A	Not Changd	---
Sample Status				ABNORMAL	ATTENTION	---

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>80	114	38	---
Chromium	ppm	ASTM D5185m	>5	2	1	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>30	19	10	---
Lead	ppm	ASTM D5185m	>30	0	2	---
Copper	ppm	ASTM D5185m	>150	107	108	---
Tin	ppm	ASTM D5185m	>5	<1	<1	---
Vanadium	ppm	ASTM D5185m		0	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

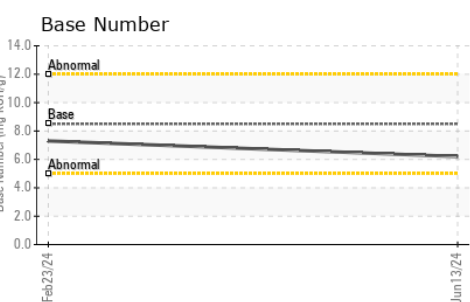
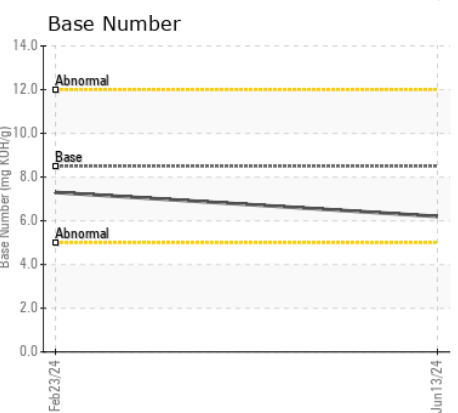
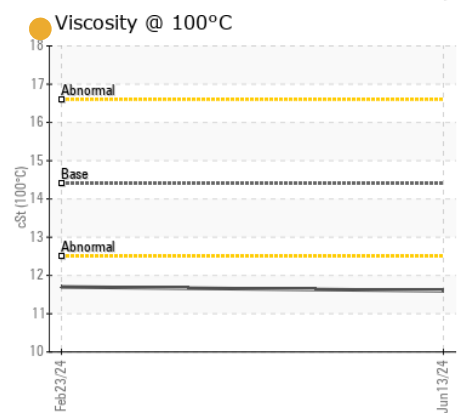
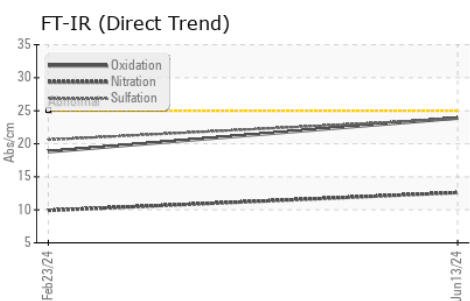
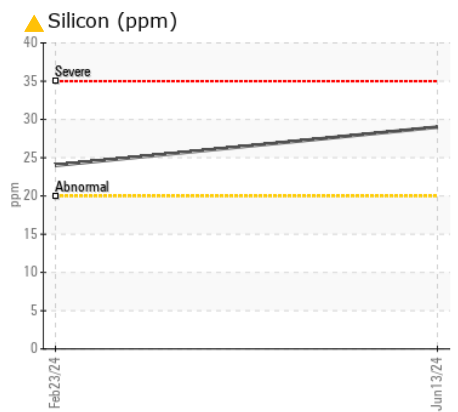
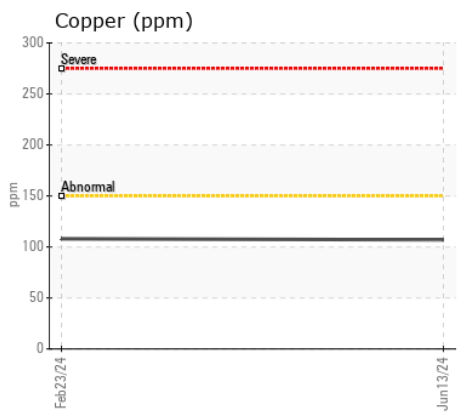
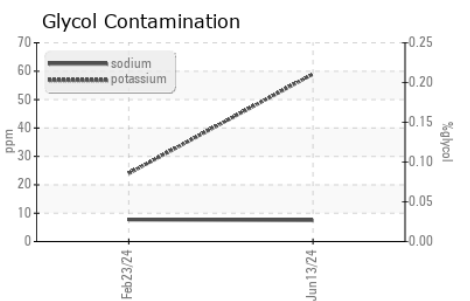
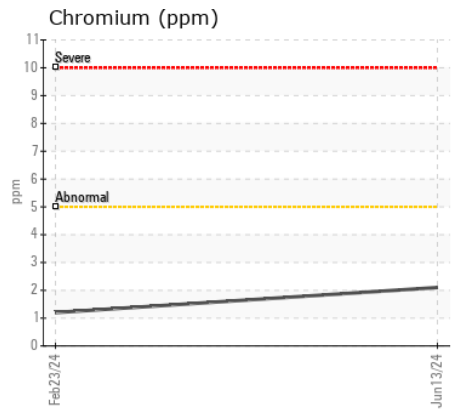
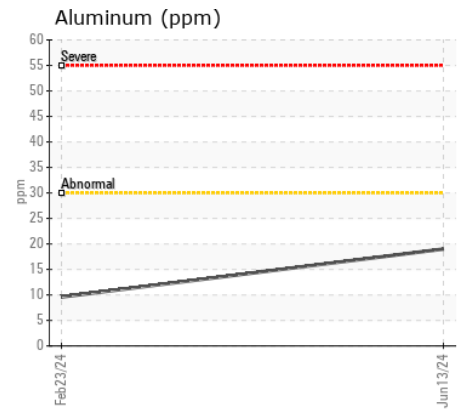
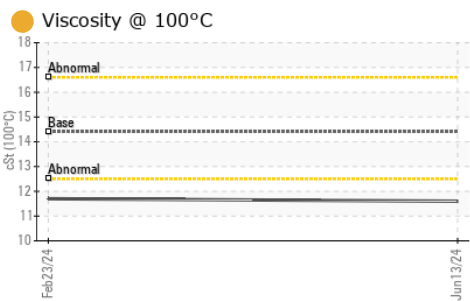
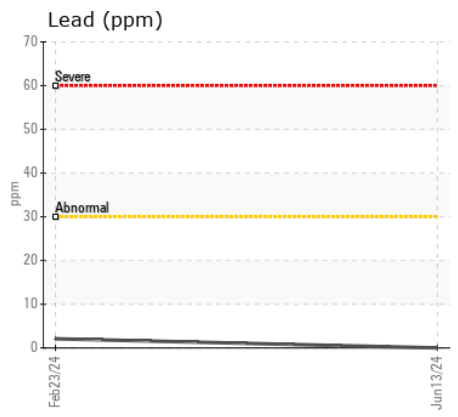
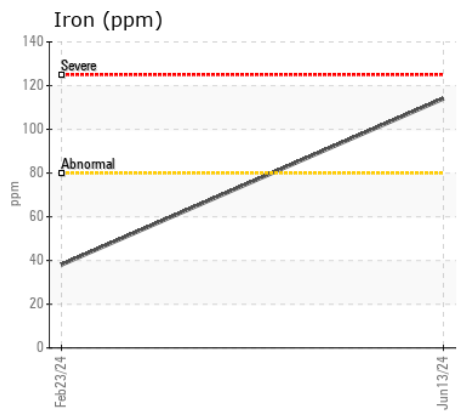
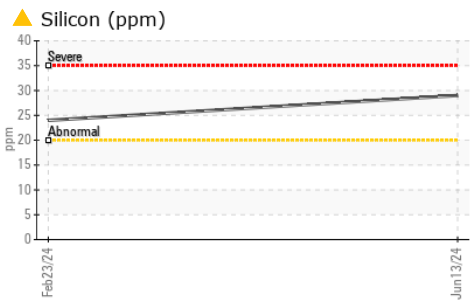
Elemental level of silicon (Si) above normal indicating ingress of seal material. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components.

Silicon	ppm	ASTM D5185m	>20	▲ 29	24	---
Potassium	ppm	ASTM D5185m	>20	59	24	---
Fuel		WC Method	>5	<1.0	1.8	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.8	0.4	---
Nitration	Abs/cm	*ASTM D7624	>20	12.6	9.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.8	20.6	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

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.

Sodium	ppm	ASTM D5185m	>158	8	8	---
Boron	ppm	ASTM D5185m	250	22	47	---
Barium	ppm	ASTM D5185m	10	5	5	---
Molybdenum	ppm	ASTM D5185m	100	48	53	---
Manganese	ppm	ASTM D5185m		7	6	---
Magnesium	ppm	ASTM D5185m	450	715	741	---
Calcium	ppm	ASTM D5185m	3000	1337	1353	---
Phosphorus	ppm	ASTM D5185m	1150	748	790	---
Zinc	ppm	ASTM D5185m	1350	909	950	---
Sulfur	ppm	ASTM D5185m	4250	2550	2305	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.9	18.8	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.2	7.3	---
Visc @ 100°C	cSt	ASTM D445	14.4	● 11.6	● 11.7	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0948988 **Received** : 26 Jun 2024
Lab Number : 06220858 **Tested** : 27 Jun 2024
Unique Number : 11099055 **Diagnosed** : 27 Jun 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

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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)