



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER 35157
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0012145	KL0012068	KL0012063
Sample Date		Client Info		30 Jan 2024	31 Oct 2023	27 Jul 2023
Machine Age	mls	Client Info		265926	265926	244807
Oil Age	mls	Client Info		101216	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	16	10	44
Chromium	ppm	ASTM D5185m	>5	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	4	3	▲ 12
Lead	ppm	ASTM D5185m	>30	0	<1	0
Copper	ppm	ASTM D5185m	>150	5	2	6
Tin	ppm	ASTM D5185m	>5	<1	<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

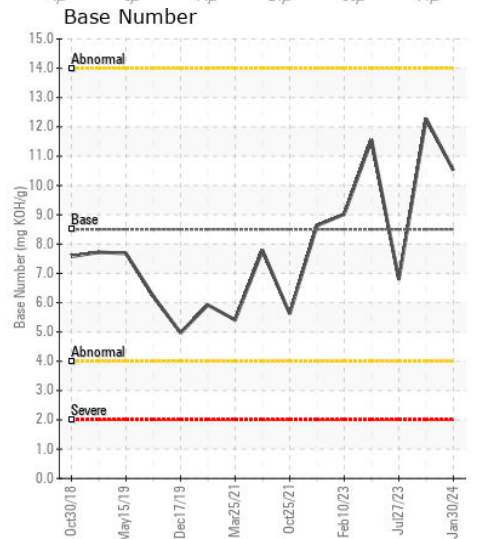
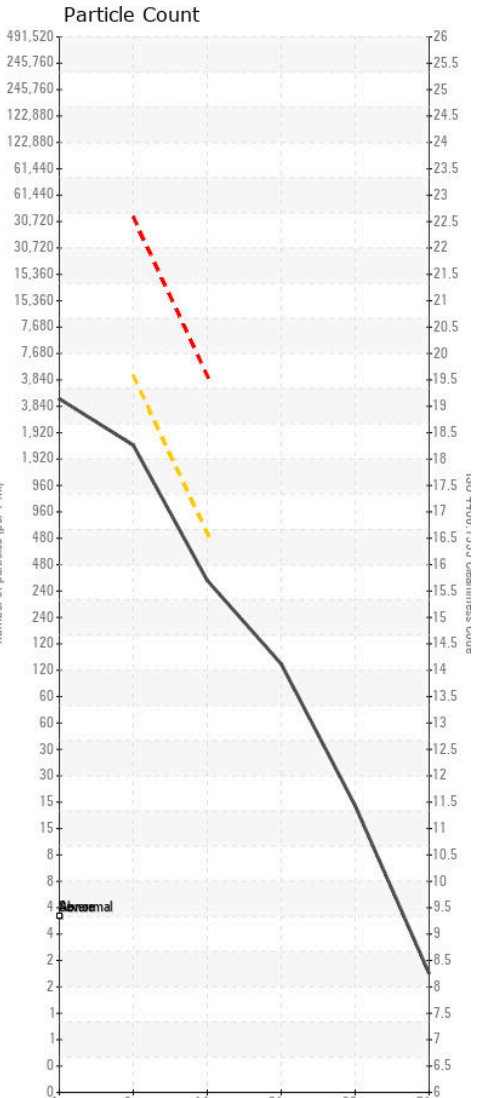
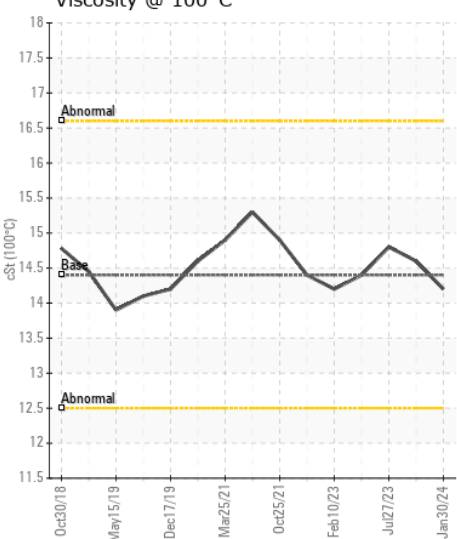
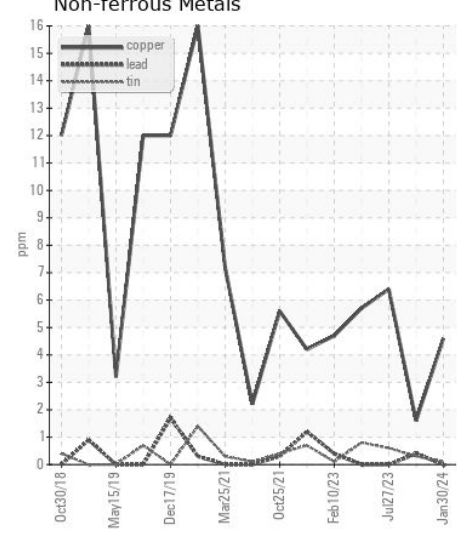
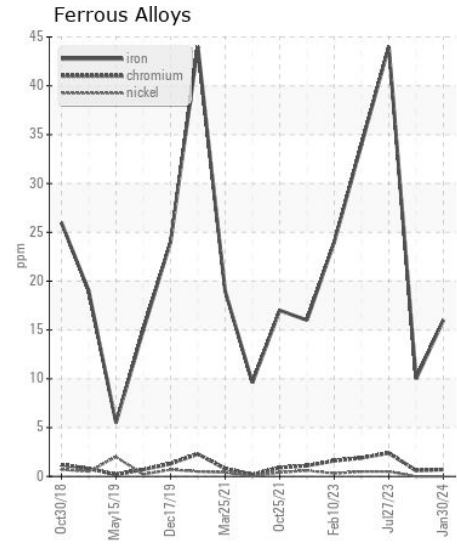
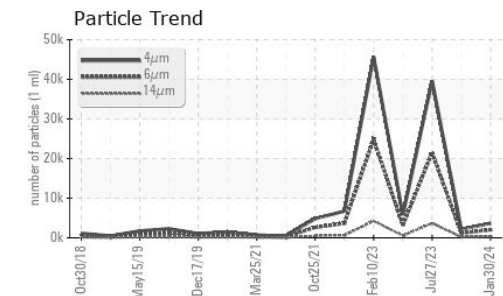
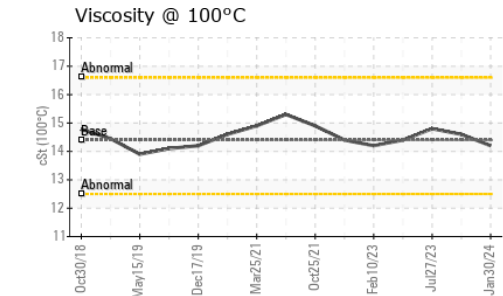
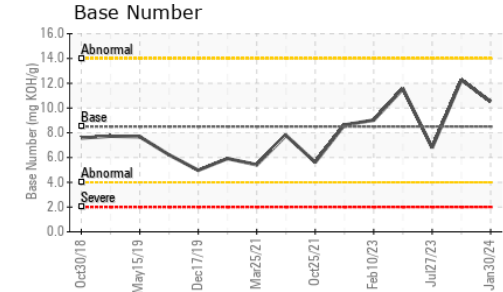
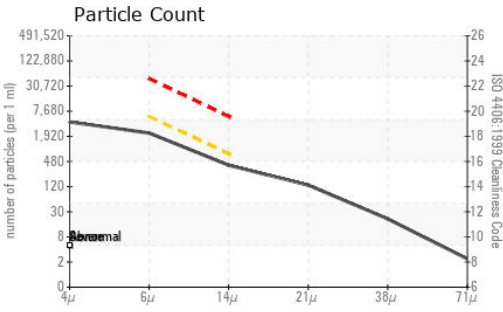
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>20	8	7	▲ 21
Potassium	ppm	ASTM D5185m	>20	6	4	9
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.6	0.4	1.3
Nitration	Abs/cm	*ASTM D7624	>20	9.1	7.8	13.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	21.2	28.0
Particles >4µm		ASTM D7647		3697	2114	39566
Particles >6µm		ASTM D7647	>5000	2014	1152	▲ 21554
Particles >14µm		ASTM D7647	>640	343	196	▲ 3668
Particles >21µm		ASTM D7647	>160	115	66	▲ 1236
Particles >38µm		ASTM D7647	>40	18	10	▲ 191
Particles >71µm		ASTM D7647	>10	2	1	▲ 19
Oil Cleanliness		ISO 4406 (c)	>19/16	18/16	17/15	▲ 22/19
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	4	5	20
Boron	ppm	ASTM D5185m	250	41	96	15
Barium	ppm	ASTM D5185m	10	11	0	0
Molybdenum	ppm	ASTM D5185m	100	56	60	64
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	450	937	1154	1105
Calcium	ppm	ASTM D5185m	3000	895	1045	1349
Phosphorus	ppm	ASTM D5185m	1150	941	1151	1163
Zinc	ppm	ASTM D5185m	1350	1095	1380	1466
Sulfur	ppm	ASTM D5185m	4250	3226	3678	4130
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	17.2	24.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	10.52	12.27	6.79
Visc @ 100°C	cSt	ASTM D445	14.4	14.2	14.6	14.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012145 **Received** : 14 Feb 2024
Lab Number : 06089626 **Tested** : 16 Feb 2024
Unique Number : 10877071 **Diagnosed** : 16 Feb 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: PrtCount)

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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)