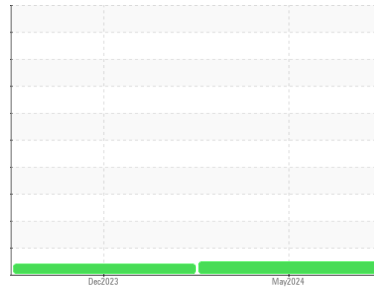




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
95072 FREIGHTLINER
 Component
1 Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			SBP0007217	SBP0006016	---
Sample Date	Client Info			28 May 2024	07 Dec 2023	---
Machine Age	mls Client Info			60865	49042	---
Oil Age	mls Client Info			11823	49042	---
Oil Changed	Client Info			Changed	Changed	---
Sample Status				NORMAL	ATTENTION	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	0.4	---
Water	WC Method	>0.2		NEG	NEG	---
Glycol	WC Method			NEG	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	64	23	---
Chromium	ppm	ASTM D5185m	>5	1	<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	16	5	---
Lead	ppm	ASTM D5185m	>30	0	0	---
Copper	ppm	ASTM D5185m	>150	3	2	---
Tin	ppm	ASTM D5185m	>5	<1	<1	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	2	1	---
Barium	ppm	ASTM D5185m	10	0	0	---
Molybdenum	ppm	ASTM D5185m	100	64	56	---
Manganese	ppm	ASTM D5185m		1	<1	---
Magnesium	ppm	ASTM D5185m	450	1055	929	---
Calcium	ppm	ASTM D5185m	3000	1154	1004	---
Phosphorus	ppm	ASTM D5185m	1150	1150	947	---
Zinc	ppm	ASTM D5185m	1350	1369	1243	---
Sulfur	ppm	ASTM D5185m	4250	3804	2842	---

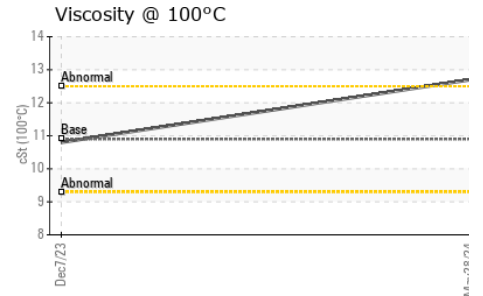
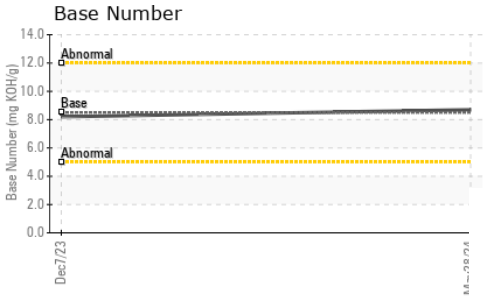
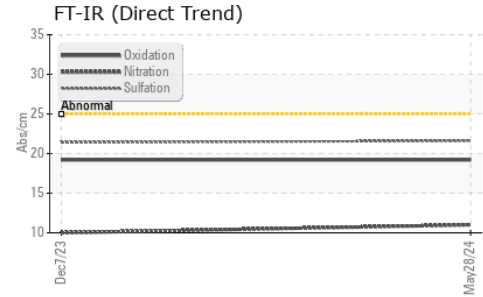
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	5	3	---
Sodium	ppm	ASTM D5185m		2	<1	---
Potassium	ppm	ASTM D5185m	>20	17	5	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.6	0.5	---
Nitration	Abs/cm	*ASTM D7624	>20	11.0	10.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.6	21.4	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.2	19.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.7	8.2	---



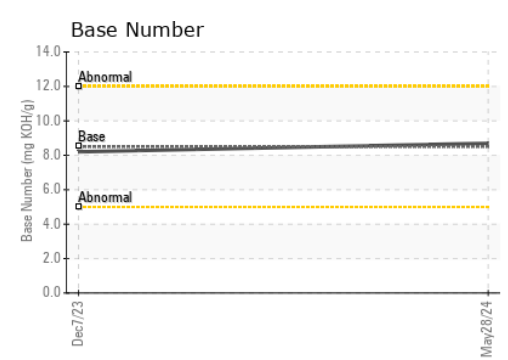
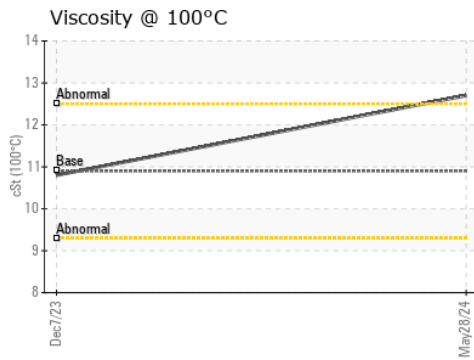
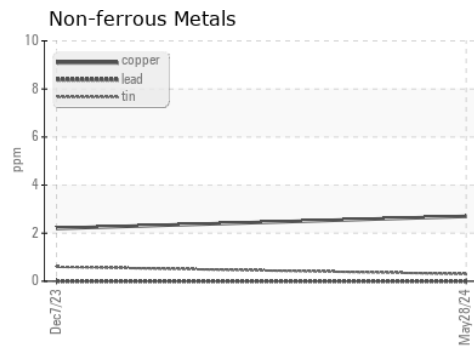
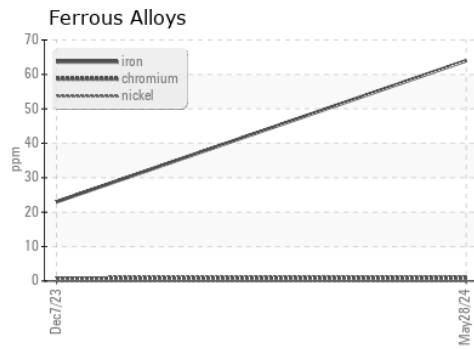
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	12.7	10.8

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0007217 **Received** : 26 Jun 2024
Lab Number : **06220684** **Tested** : 27 Jun 2024
Unique Number : 11098881 **Diagnosed** : 27 Jun 2024 - Angela Borella
Test Package : FLEET

Sapp Bros. Petroleum - Corporate - OMA
 9915 South 148th
 OMAHA, NE
 US 68138
 Contact: Josh Broz
 JBroz@sappbros.net
 T: (402)895-2202
 F:

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)