OIL ANALYSIS REPORT

SAPP BROS. PETROLEUM

Area
(206567)
Machine Id
97024 FREIGHTLINER M2
Component
Front Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 10W30 (--- GAL)

Sample Rating Trend

Apr2023   Dec2023   Mar2024   May2024

NORMAL ✓

DIAGNOSIS

Recommendation
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		**SBP0007023**	SBP0006542	SBP0006540
Sample Date	Client Info		**24 May 2024**	11 Mar 2024	08 Dec 2023
Machine Age	mls	Client Info	**225624**	216258	204913
Oil Age	mls	Client Info	**9366**	11345	31531
Oil Changed		Client Info	**Changed**	Changed	Changed
Sample Status			**NORMAL**	ABNORMAL	NORMAL

CONTAMINATION	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	**<1.0**	<1.0	<1.0
Water	WC Method	>0.2	**NEG**	NEG	NEG
Glycol	WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>130	**11**	⚠ 182	18
Chromium	ppm	ASTM D5185m	>10	**<1**	3	<1
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	0
Titanium	ppm	ASTM D5185m	>2	**0**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**3**	13	3
Lead	ppm	ASTM D5185m	>20	**0**	3	0
Copper	ppm	ASTM D5185m	>125	**1**	10	1
Tin	ppm	ASTM D5185m	>4	**0**	2	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**3**	25	1
Barium	ppm	ASTM D5185m	10	**0**	11	0
Molybdenum	ppm	ASTM D5185m	100	**59**	47	56
Manganese	ppm	ASTM D5185m		**<1**	3	<1
Magnesium	ppm	ASTM D5185m	450	**981**	608	921
Calcium	ppm	ASTM D5185m	3000	**1083**	1430	976
Phosphorus	ppm	ASTM D5185m	1150	**1061**	913	929
Zinc	ppm	ASTM D5185m	1350	**1300**	1038	1238
Sulfur	ppm	ASTM D5185m	4250	**3667**	3201	2807

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	14	4
Sodium	ppm	ASTM D5185m		**1**	14	<1
Potassium	ppm	ASTM D5185m	>20	**2**	17	1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	**0.4**	1	0.5
Nitration	Abs/cm	*ASTM D7624	>20	**8.5**	12.3	9.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.1**	28.4	21.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.1**	30.1	19.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**9.2**	6.4	8.2

OIL ANALYSIS REPORT

FT-IR (Direct Trend)
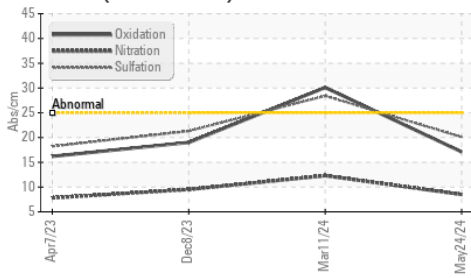
Base Number
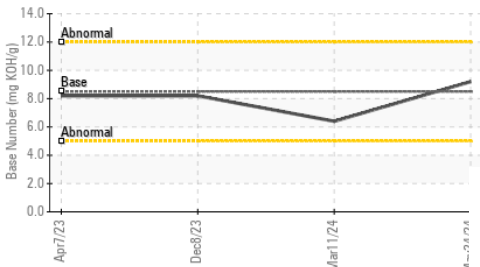
Viscosity @ 100°C
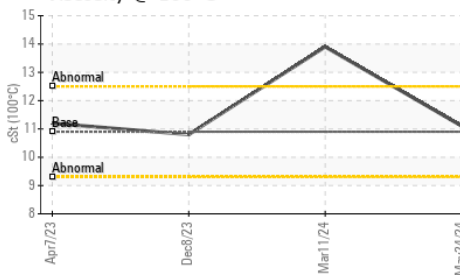
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	10.9	**11.1**	13.9	10.8

GRAPHS

Ferrous Alloys
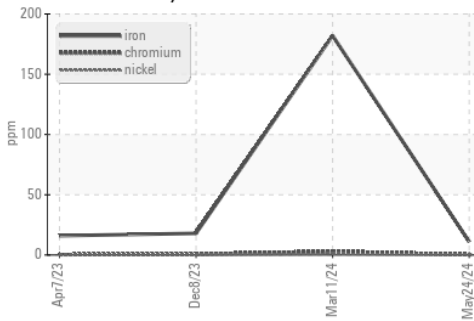
Non-ferrous Metals
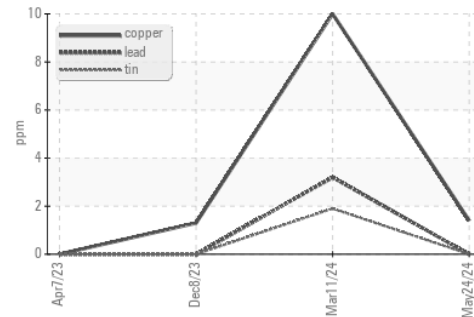
Viscosity @ 100°C
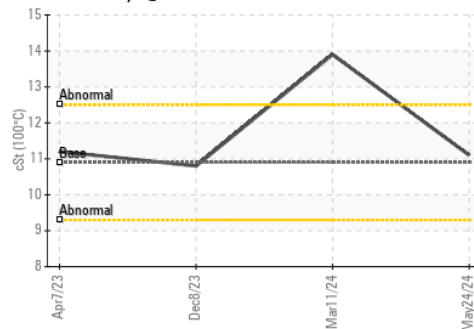
Base Number
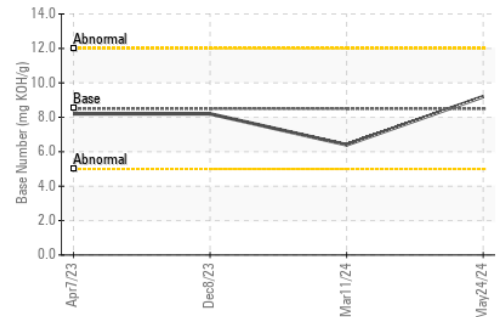
To discuss this sample report, contact Customer Service at 1-800-237-1369.
* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)