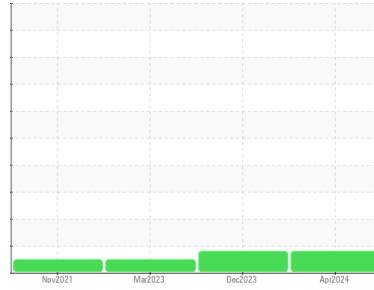




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
91037
 Component
Diesel Engine
 Fluid
15W40 AMG (10 GAL)

DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

▲ Wear

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other 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		SBP0006572	SBP0006022	SBP0002544
Sample Date	Client Info		30 Apr 2024	01 Dec 2023	09 Mar 2023
Machine Age	mls	Client Info	505106	476838	443312
Oil Age	mls	Client Info	28268	32138	68822
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	ABNORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>80	25	8	40
Chromium	ppm	ASTM D5185m	>5	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	2
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>30	13	4	21
Lead	ppm	ASTM D5185m	>30	2	0	<1
Copper	ppm	ASTM D5185m	>150	▲ 303	▲ 143	6
Tin	ppm	ASTM D5185m	>5	0	0	<1
Antimony	ppm	ASTM D5185m		---	---	---
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		0	27	4
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		58	40	50
Manganese	ppm	ASTM D5185m		<1	<1	2
Magnesium	ppm	ASTM D5185m		974	574	947
Calcium	ppm	ASTM D5185m		1356	1678	1238
Phosphorus	ppm	ASTM D5185m		944	816	972
Zinc	ppm	ASTM D5185m		1219	993	1249
Sulfur	ppm	ASTM D5185m		2505	2448	3151

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>20	6	6	8
Sodium	ppm	ASTM D5185m		3	6	4
Potassium	ppm	ASTM D5185m	>20	<1	6	3
Glycol	%	*ASTM D2982		NEG	NEG	NEG

INFRA-RED

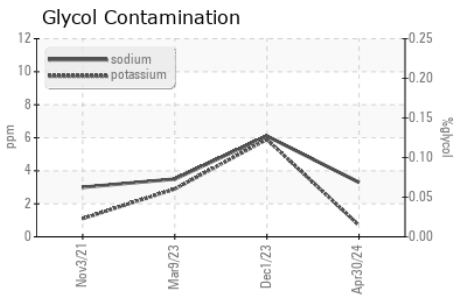
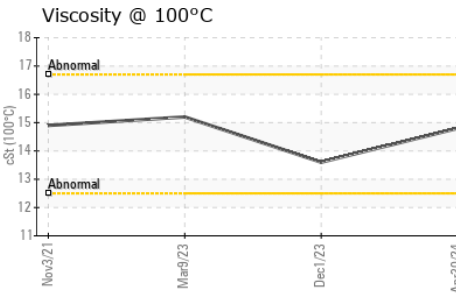
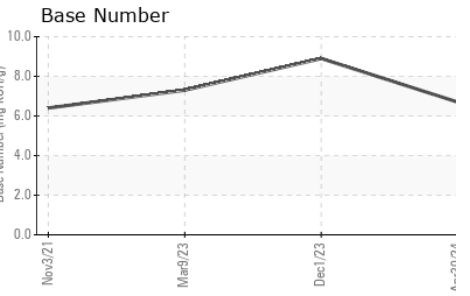
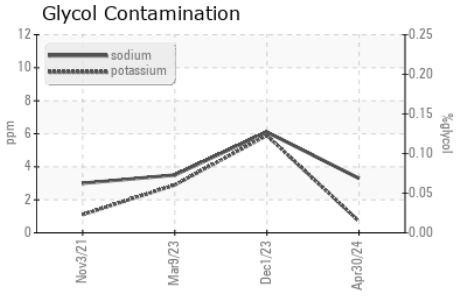
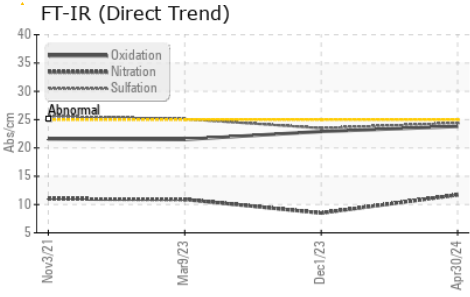
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	1.2	0.5	1.1
Nitration	Abs/cm	*ASTM D7624	>20	11.7	8.5	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.4	23.5	25.1

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.8	22.9	21.5
Base Number (BN)	mg KOH/g	ASTM D2896		6.7	8.9	7.3



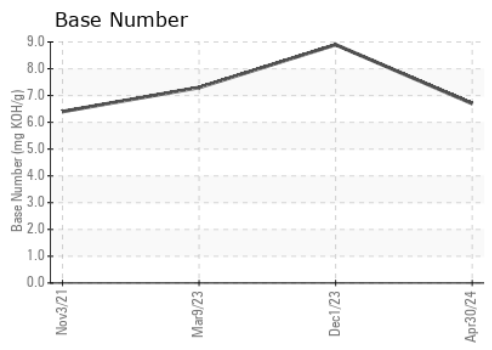
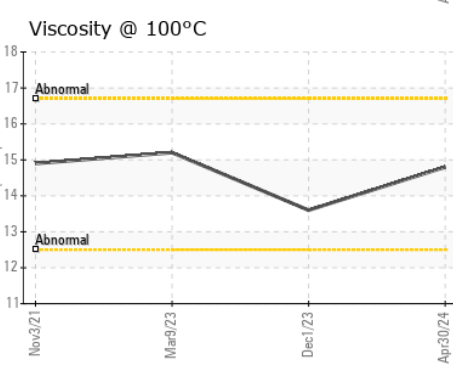
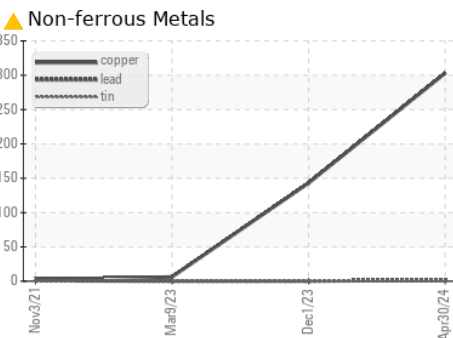
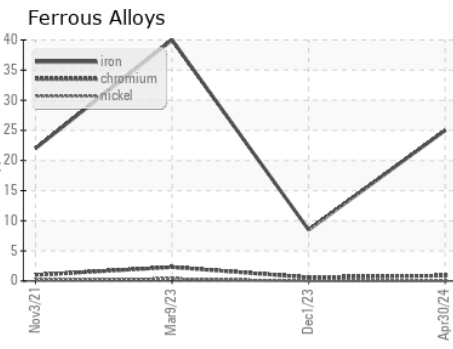
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
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
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.8	13.6	15.2

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : SBP0006572 **Received** : 14 May 2024
Lab Number : 06178333 **Tested** : 16 May 2024
Unique Number : 11029659 **Diagnosed** : 16 May 2024 - Sean Felton
Test Package : FLEET (Additional Tests: Glycol)

Sapp Bros. Fleet - Omaha Petroleum Location
 9915 South 148th
 OMAHA, NE 68138
 Contact: Stephanie Kelly
 skelly@sappbros.net
 T: (800)211-8589
 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)