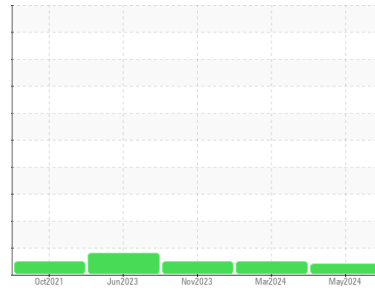




# OIL ANALYSIS REPORT

## Sample Rating Trend



## VISCOSITY



Machine Id

**91053**

Component

**Diesel Engine**

Fluid

**DISEL ENGINE OIL SAE 15W40 (10 GAL)**

### DIAGNOSIS

#### Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

#### 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.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>SBP0007202</b>	SBP0006577	SBP0005992
Sample Date	Client Info		<b>14 May 2024</b>	29 Mar 2024	15 Nov 2023
Machine Age	mls	Client Info	<b>278998</b>	273565	252804
Oil Age	mls	Client Info	<b>5433</b>	20761	252804
Oil Changed	Client Info		<b>Changed</b>	Changed	N/A
Sample Status			<b>ATTENTION</b>	NORMAL	NORMAL

### CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

### WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>80	<b>11</b>	27	27
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	3	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>30	<b>6</b>	16	17
Lead	ppm	ASTM D5185m	>30	<b>1</b>	<1	0
Copper	ppm	ASTM D5185m	>150	<b>2</b>	6	7
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0

### ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	250	<b>2</b>	<1	<1
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	2
Molybdenum	ppm	ASTM D5185m	100	<b>60</b>	64	60
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m	450	<b>1002</b>	994	935
Calcium	ppm	ASTM D5185m	3000	<b>1245</b>	1113	1103
Phosphorus	ppm	ASTM D5185m	1150	<b>1175</b>	1005	959
Zinc	ppm	ASTM D5185m	1350	<b>1376</b>	1286	1232
Sulfur	ppm	ASTM D5185m	4250	<b>3998</b>	2986	4055

### CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	7	5
Sodium	ppm	ASTM D5185m	>158	<b>&lt;1</b>	4	0
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	8	17
Fuel	%	ASTM D3524	>5	<b>0.2</b>	<1.0	<1.0

### INFRA-RED

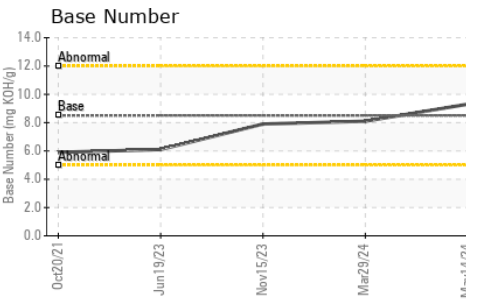
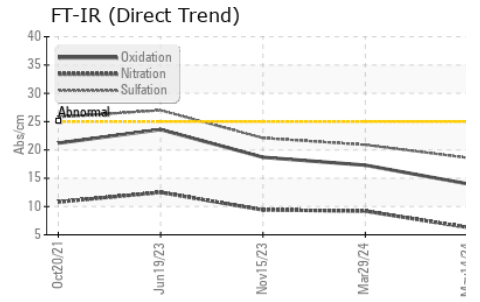
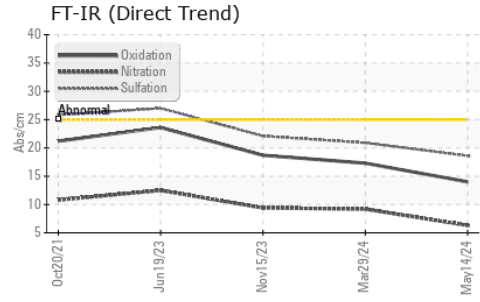
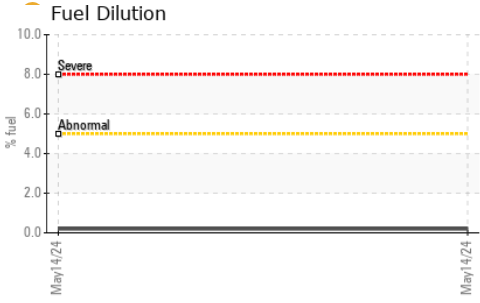
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.7	0.6
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.3</b>	9.2	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.6</b>	20.9	22.1

### FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.0</b>	17.3	18.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>9.3</b>	8.1	7.9



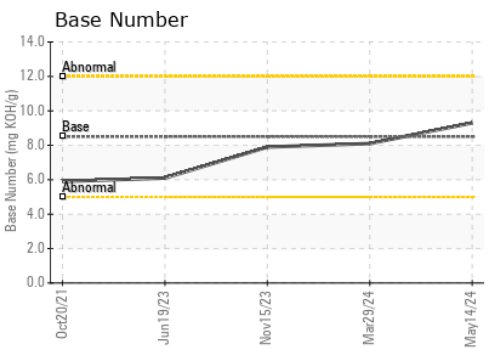
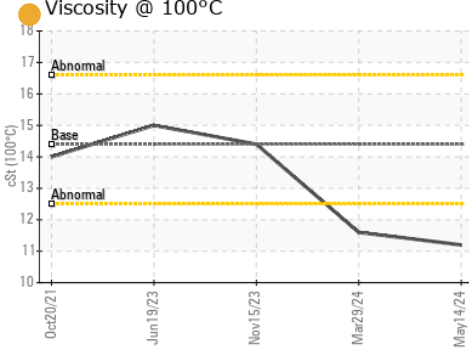
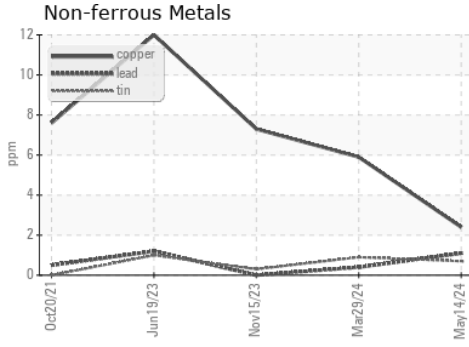
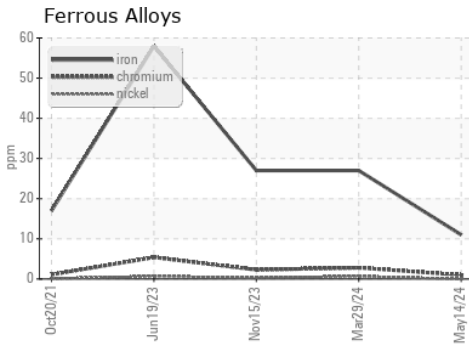
# OIL ANALYSIS REPORT



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	14.4	● 11.2	11.6	14.4

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : SBP0007202      **Received** : 30 May 2024  
**Lab Number** : 06195053      **Tested** : 04 Jun 2024  
**Unique Number** : 11057176      **Diagnosed** : 04 Jun 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

**Sapp Bros. Fleet - Omaha Petroleum Location**  
 9915 South 148th  
 OMAHA, NE  
 US 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)