



# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**604470 WESTERN STAR 4900SF**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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			<b>WC0733946</b>	---	---
Sample Date	Client Info			<b>04 Apr 2024</b>	---	---
Machine Age	mls	Client Info		<b>90659</b>	---	---
Oil Age	mls	Client Info		<b>0</b>	---	---
Oil Changed	Client Info			<b>Changed</b>	---	---
Sample Status				<b>NORMAL</b>	---	---

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	<b>43</b>	---	---
Chromium	ppm	ASTM D5185m	>20	<b>3</b>	---	---
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	---	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	---	---
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	---	---
Aluminum	ppm	ASTM D5185m	>20	<b>24</b>	---	---
Lead	ppm	ASTM D5185m	>40	<b>0</b>	---	---
Copper	ppm	ASTM D5185m	>330	<b>31</b>	---	---
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	---	---
Cadmium	ppm	ASTM D5185m		<b>0</b>	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>16</b>	---	---
Barium	ppm	ASTM D5185m		<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m		<b>64</b>	---	---
Manganese	ppm	ASTM D5185m		<b>1</b>	---	---
Magnesium	ppm	ASTM D5185m		<b>66</b>	---	---
Calcium	ppm	ASTM D5185m		<b>2429</b>	---	---
Phosphorus	ppm	ASTM D5185m		<b>1067</b>	---	---
Zinc	ppm	ASTM D5185m		<b>1287</b>	---	---
Sulfur	ppm	ASTM D5185m		<b>4001</b>	---	---

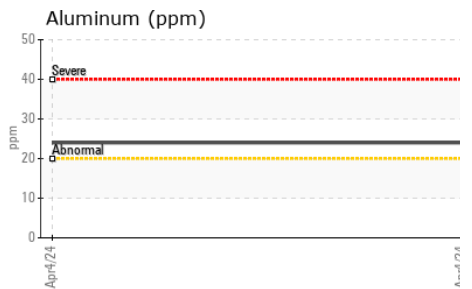
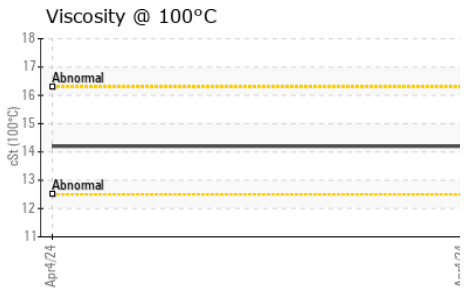
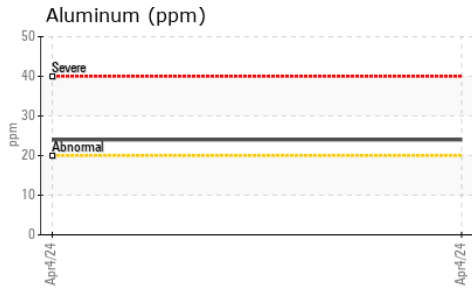
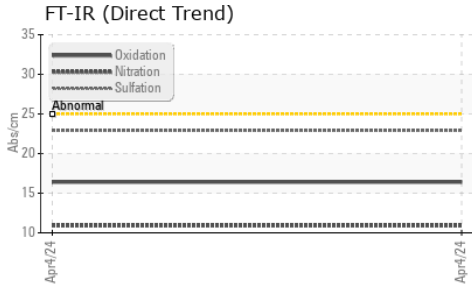
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>7</b>	---	---
Sodium	ppm	ASTM D5185m	>150	<b>1</b>	---	---
Potassium	ppm	ASTM D5185m	>20	<b>44</b>	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	---	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.9</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.9</b>	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.4</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		<b>5.0</b>	---	---



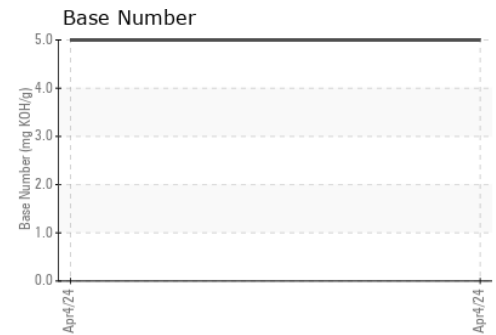
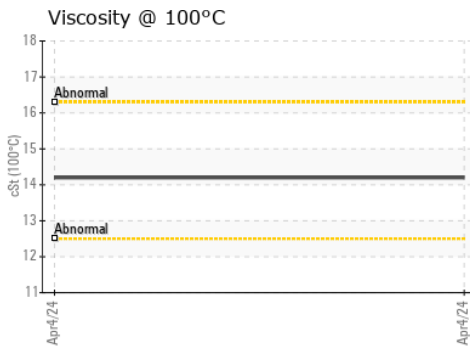
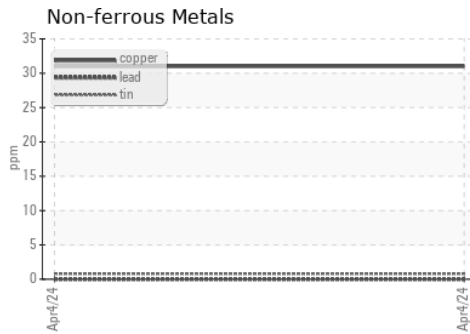
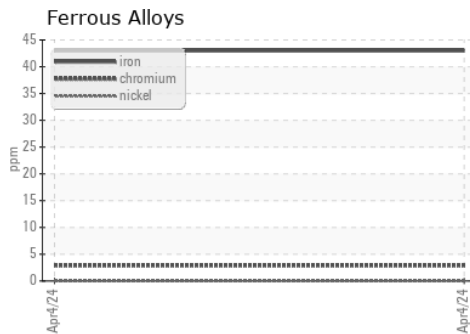
# OIL ANALYSIS REPORT



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	14.2	---	---

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0733946      **Received** : 15 Apr 2024  
**Lab Number** : 06149443      **Tested** : 16 Apr 2024  
**Unique Number** : 10979521      **Diagnosed** : 16 Apr 2024 - Wes Davis  
**Test Package** : FLEET

**TRI-CITY HIGHWAY**  
 145 PODPADIC ROAD  
 RICHMONDVILLE, NY  
 US 12149  
 Contact: DAN CORBETT  
 dcorbett@tchpi.com

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)

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F: