



WEAR	<b>ABNORMAL</b>
CONTAMINATION	<b>ABNORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**YRD 9**  
Component  
**Diesel Engine**  
Fluid  
**VALVOLINE 15W40 (--- GAL)**

### RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>IL0034237</b>	---	---
Sample Date		Client Info		<b>15 Dec 2023</b>	---	---
Machine Age	hrs	Client Info		<b>1538</b>	---	---
Oil Age	hrs	Client Info		<b>0</b>	---	---
Filter Age	hrs	Client Info		<b>0</b>	---	---
Oil Changed		Client Info		<b>Changed</b>	---	---
Filter Changed		Client Info		<b>Changed</b>	---	---
Sample Status				<b>ABNORMAL</b>	---	---

### WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>▲ 176</b>	---	---
Chromium	ppm	ASTM D5185m	>20	<b>5</b>	---	---
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	---	---
Titanium	ppm	ASTM D5185m		<b>0</b>	---	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m	>20	<b>▲ 7</b>	---	---
Lead	ppm	ASTM D5185m	>40	<b>0</b>	---	---
Copper	ppm	ASTM D5185m	>330	<b>32</b>	---	---
Tin	ppm	ASTM D5185m	>15	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	---	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---

### CONTAMINATION

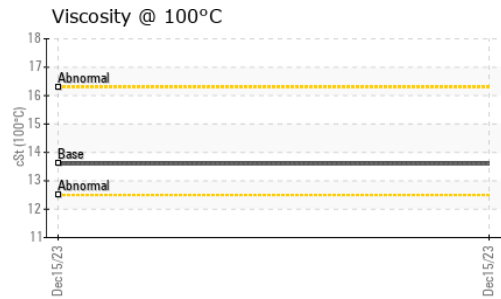
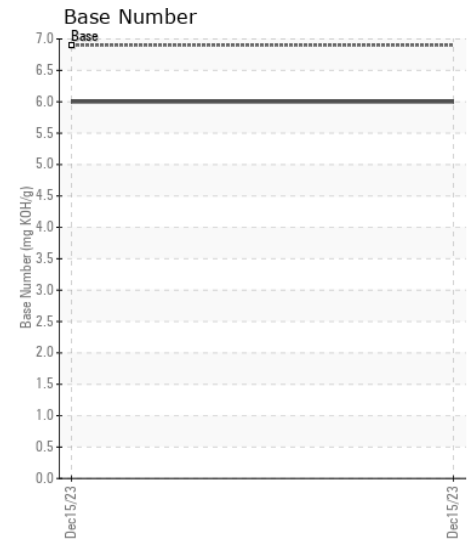
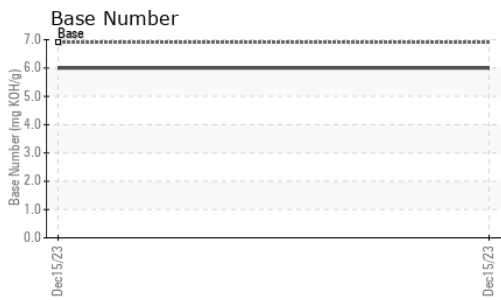
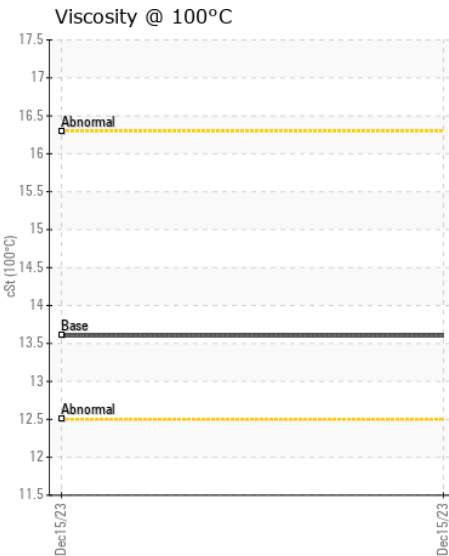
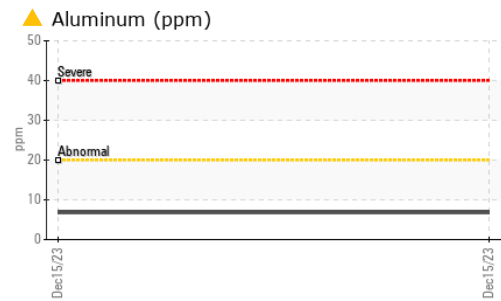
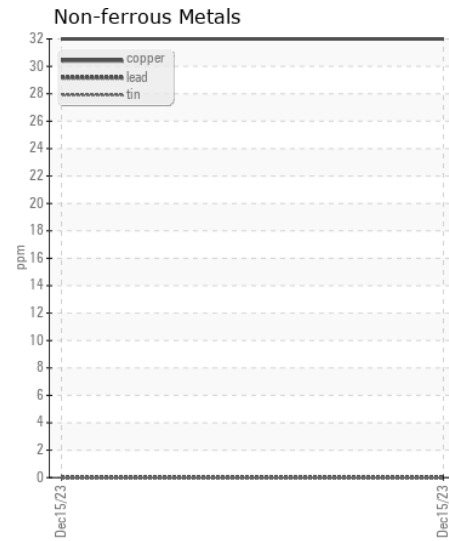
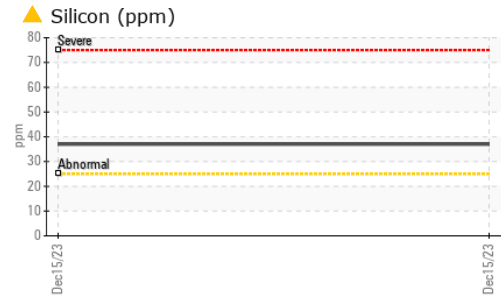
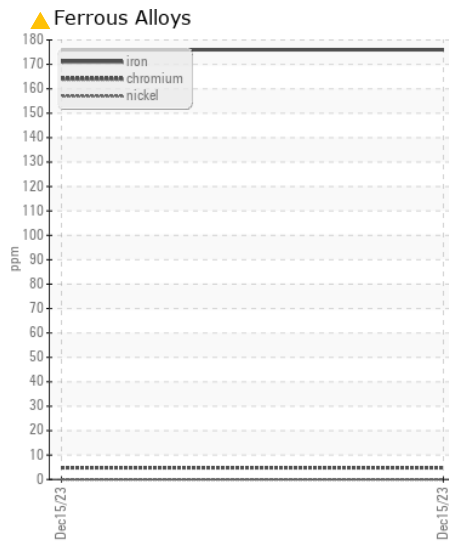
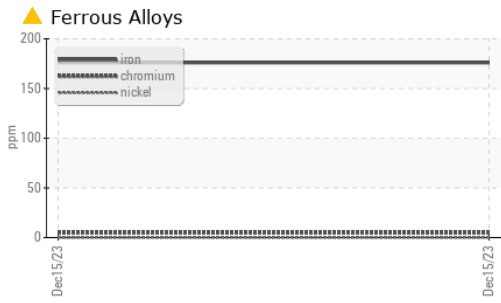
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	<b>▲ 37</b>	---	---
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	---	---
Fuel		WC Method	>5	<b>&lt;1.0</b>	---	---
Water		WC Method	>0.2	<b>NEG</b>	---	---
Glycol		WC Method		<b>NEG</b>	---	---
Soot %	%	*ASTM D7844	>3	<b>2.1</b>	---	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>15.6</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>29.0</b>	---	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	---	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	---	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	---	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	---	---

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>5</b>	---	---
Boron	ppm	ASTM D5185m	39	<b>0</b>	---	---
Barium	ppm	ASTM D5185m	1	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	49	<b>60</b>	---	---
Manganese	ppm	ASTM D5185m	1	<b>8</b>	---	---
Magnesium	ppm	ASTM D5185m	616	<b>951</b>	---	---
Calcium	ppm	ASTM D5185m	1554	<b>1074</b>	---	---
Phosphorus	ppm	ASTM D5185m	899	<b>897</b>	---	---
Zinc	ppm	ASTM D5185m	1069	<b>1170</b>	---	---
Sulfur	ppm	ASTM D5185m	2624	<b>2743</b>	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>27.2</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	6.9	<b>6.0</b>	---	---
Visc @ 100°C	cSt	ASTM D445	13.6	<b>13.6</b>	---	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : IL0034237 **Received** : 10 Jan 2024  
**Lab Number** : 06057266 **Diagnosed** : 12 Jan 2024  
**Unique Number** : 10823215 **Diagnostician** : Don Baldrige  
**Test Package** : FLEET

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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)