



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id  
**RO-11 (S/N 462237)**

Component  
**Diesel Engine**

Fluid  
**VALVOLINE PREMIUM BLUE (--- QTS)**

## RECOMMENDATION

We advise that you check the fuel injection system. 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>WC0638713</b>	WC0572534	---
Sample Date		Client Info		<b>29 Oct 2021</b>	22 Jun 2021	---
Machine Age	hrs	Client Info		<b>1224</b>	563	---
Oil Age	hrs	Client Info		<b>661</b>	563	---
Filter Age	hrs	Client Info		<b>661</b>	563	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>ABNORMAL</b>	NORMAL	---

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>39</b>	46	---
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	1	---
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	---
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	---
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	8	---
Lead	ppm	ASTM D5185m	>40	<b>2</b>	<1	---
Copper	ppm	ASTM D5185m	>330	<b>44</b>	264	---
Tin	ppm	ASTM D5185m	>15	<b>1</b>	1	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

## CONTAMINATION

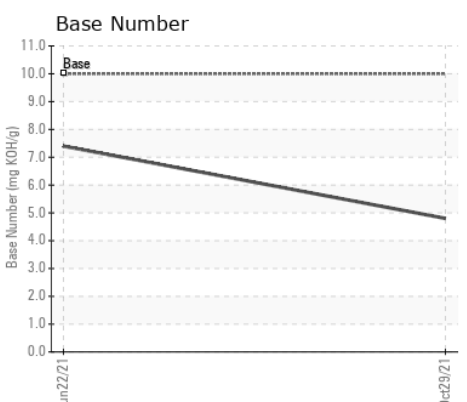
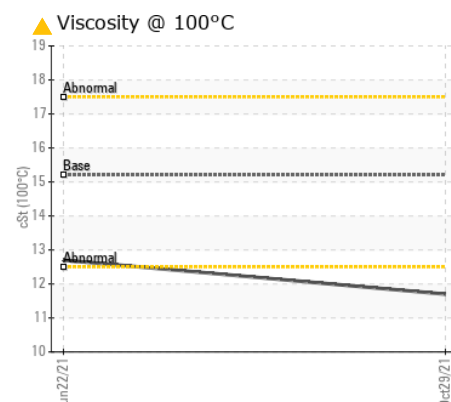
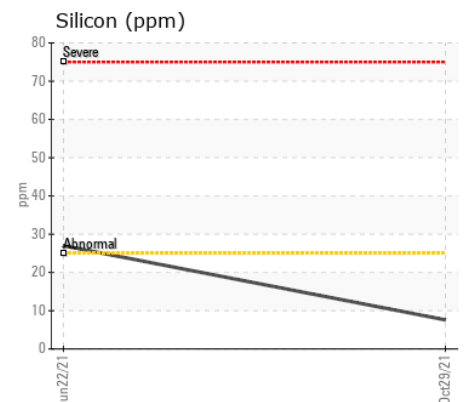
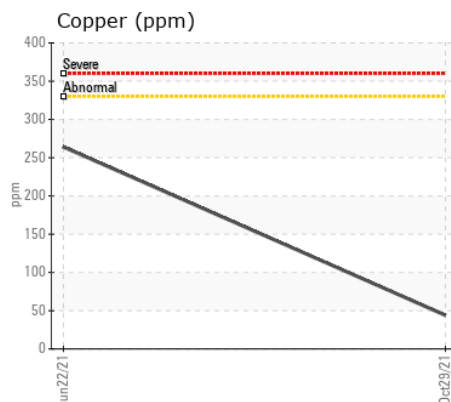
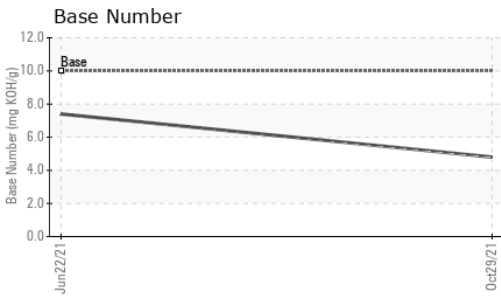
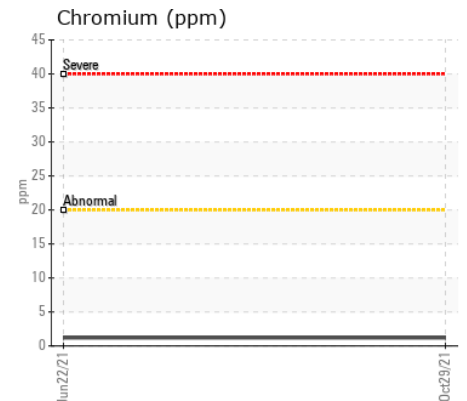
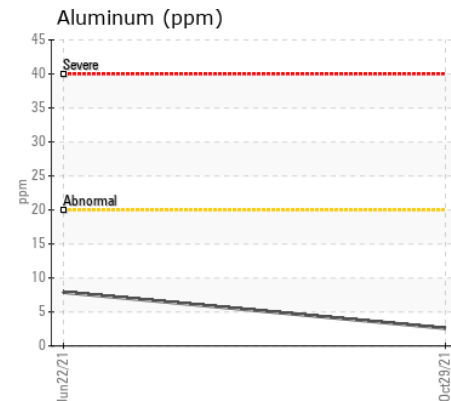
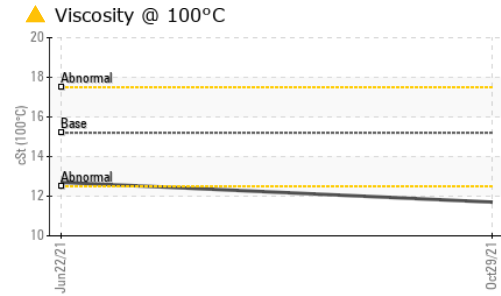
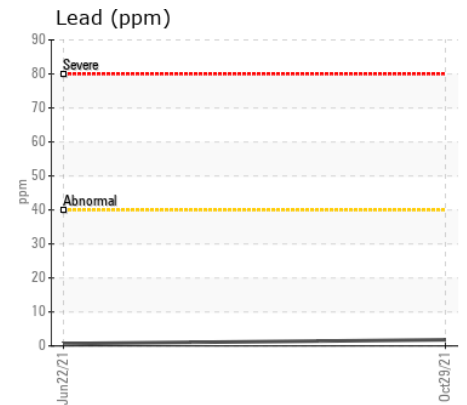
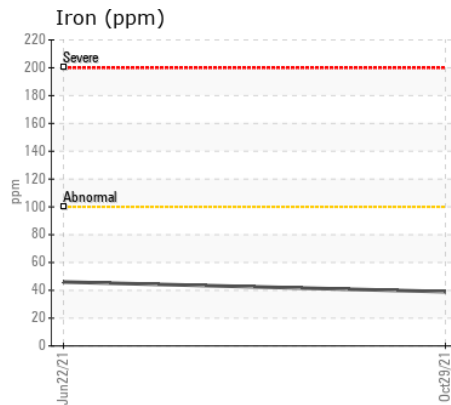
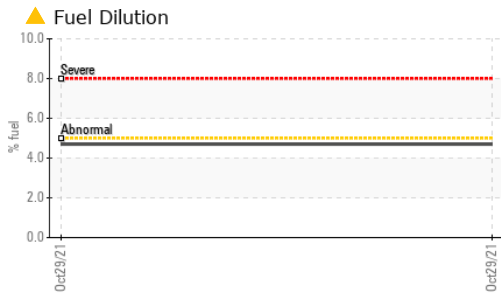
There is a moderate amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>8</b>	27	---
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	30	---
Fuel	%	ASTM D3524	>5	<b>▲ 4.7</b>	<1.0	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.6	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.7</b>	10.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.5</b>	26.5	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

## FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<b>2</b>	5	---
Boron	ppm	ASTM D5185m	2.9	<b>23</b>	211	---
Barium	ppm	ASTM D5185m	0.1	<b>0</b>	5	---
Molybdenum	ppm	ASTM D5185m	0.0	<b>41</b>	100	---
Manganese	ppm	ASTM D5185m		<b>2</b>	8	---
Magnesium	ppm	ASTM D5185m	18	<b>405</b>	653	---
Calcium	ppm	ASTM D5185m	2936	<b>1529</b>	1355	---
Phosphorus	ppm	ASTM D5185m	998	<b>668</b>	662	---
Zinc	ppm	ASTM D5185m	1095	<b>801</b>	797	---
Sulfur	ppm	ASTM D5185m	5469	<b>2292</b>	1877	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>22</b>	24.3	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.0	<b>4.8</b>	7.4	---
Visc @ 100°C	cSt	ASTM D445	15.2	<b>▲ 11.7</b>	12.7	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0638713 **Received** : 08 Nov 2021  
**Lab Number** : 05394174 **Diagnosed** : 10 Nov 2021  
**Unique Number** : 9733324 **Diagnostician** : Jonathan Hester  
**Test Package** : MOBCE ( Additional Tests: FuelDilution, PercentFuel, TBN )

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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)