



# VOLVO

## OIL ANALYSIS REPORT

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



Machine Id  
**VOLVO EC480 315321**

Component  
**Diesel Engine**

Fluid  
**VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)**

### RECOMMENDATION

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>VCP420296</b>	---	---
Sample Date		Client Info		<b>20 Oct 2023</b>	---	---
Machine Age	hrs	Client Info		<b>0</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

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).

Iron	ppm	ASTM D5185m	>100	<b>15</b>	---	---
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	---	---
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	---	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	---	---
Silver	ppm	ASTM D5185m	>2	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m	>10	<b>3</b>	---	---
Lead	ppm	ASTM D5185m	>20	<b>3</b>	---	---
Copper	ppm	ASTM D5185m	>15	<b>▲ 305</b>	---	---
Tin	ppm	ASTM D5185m	>10	<b>3</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	---	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	---	---

### CONTAMINATION

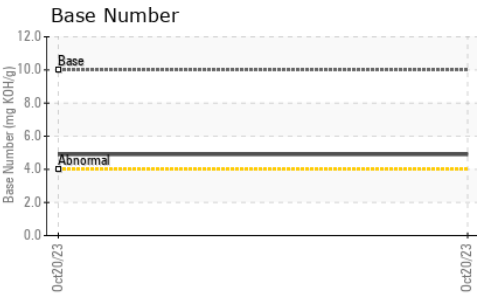
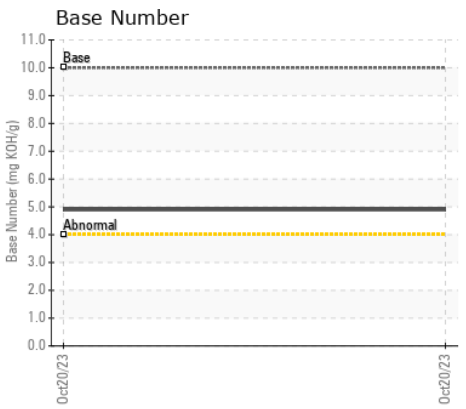
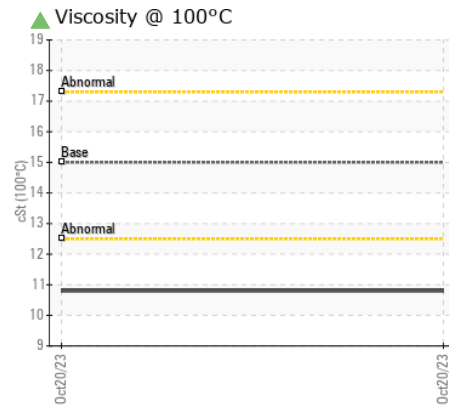
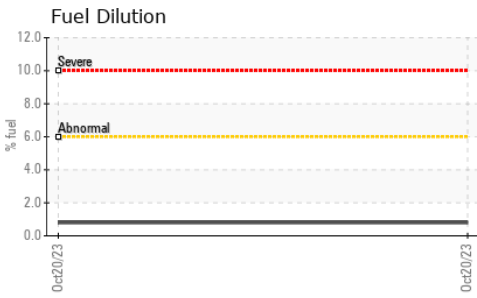
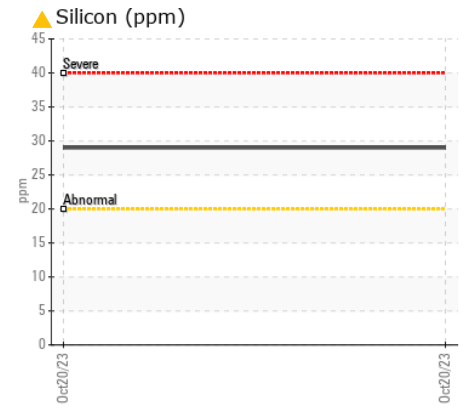
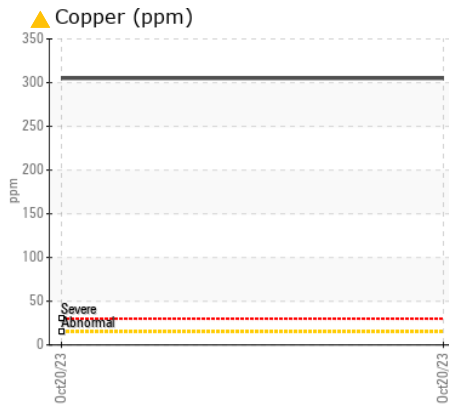
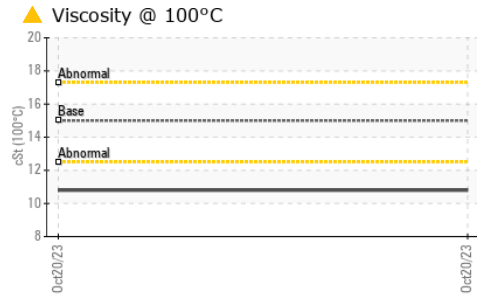
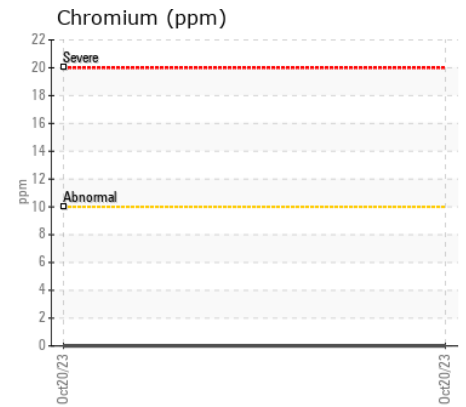
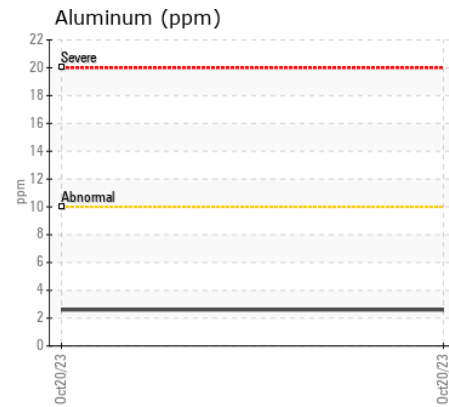
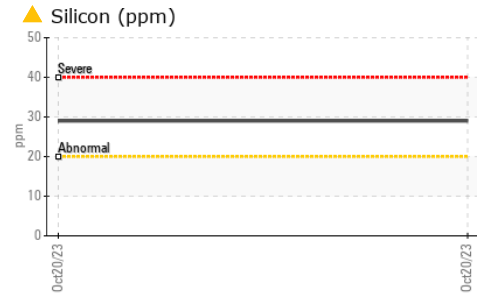
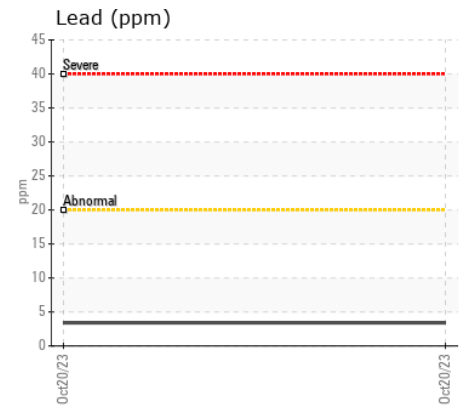
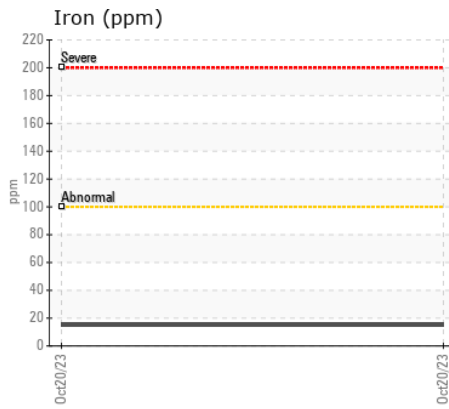
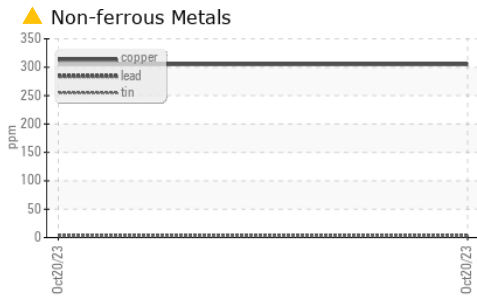
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	<b>▲ 29</b>	---	---
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	---	---
Fuel	%	ASTM D3524	>6.0	<b>0.8</b>	---	---
Water		WC Method	>0.1	<b>NEG</b>	---	---
Glycol		WC Method		<b>NEG</b>	---	---
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	---	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.6</b>	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.2</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	>0.1	<b>NEG</b>	---	---

### 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.

Sodium	ppm	ASTM D5185m		<b>4</b>	---	---
Boron	ppm	ASTM D5185m	2.5	<b>19</b>	---	---
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m	0.7	<b>91</b>	---	---
Manganese	ppm	ASTM D5185m	0.0	<b>3</b>	---	---
Magnesium	ppm	ASTM D5185m	256	<b>19</b>	---	---
Calcium	ppm	ASTM D5185m	2057	<b>2111</b>	---	---
Phosphorus	ppm	ASTM D5185m	935	<b>987</b>	---	---
Zinc	ppm	ASTM D5185m	1223	<b>1189</b>	---	---
Sulfur	ppm	ASTM D5185m	4079	<b>3546</b>	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.6</b>	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>4.9</b>	---	---
Visc @ 100°C	cSt	ASTM D445	15.0	<b>▲ 10.8</b>	---	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VCP420296 **Received** : 09 Feb 2024  
**Lab Number** : 06084444 **Tested** : 13 Feb 2024  
**Unique Number** : 10871889 **Diagnosed** : 13 Feb 2024 - Jonathan Hester  
**Test Package** : MOB 1 ( 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)