



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



Machine Id  
**VOLVO A45G 352635**  
Component  
**Diesel Engine**  
Fluid  
**VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (14 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>ML0002111</b>	ML0000074	---
Sample Date		Client Info		<b>21 Jun 2024</b>	19 Mar 2024	---
Machine Age	hrs	Client Info		<b>3746</b>	3007	---
Oil Age	hrs	Client Info		<b>3746</b>	500	---
Filter Age	hrs	Client Info		<b>3746</b>	500	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>ATTENTION</b>	NORMAL	---

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>10</b>	28	---
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	---
Nickel	ppm	ASTM D5185m	>2	<b>2</b>	5	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>25	<b>6</b>	6	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	2	---
Copper	ppm	ASTM D5185m	>330	<b>3</b>	7	---
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	2	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

**CONTAMINATION**

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

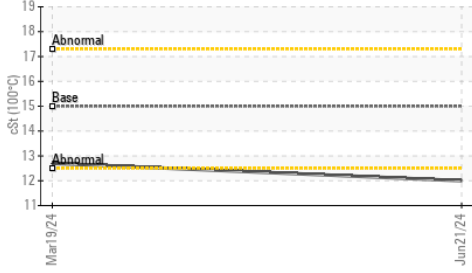
Silicon	ppm	ASTM D5185m	>25	<b>5</b>	9	---
Potassium	ppm	ASTM D5185m	>20	<b>11</b>	1	---
Fuel	%	ASTM D3524	>6.0	<b>0.3</b>	<1.0	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.4	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.8</b>	7.5	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.2</b>	22.3	---
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**

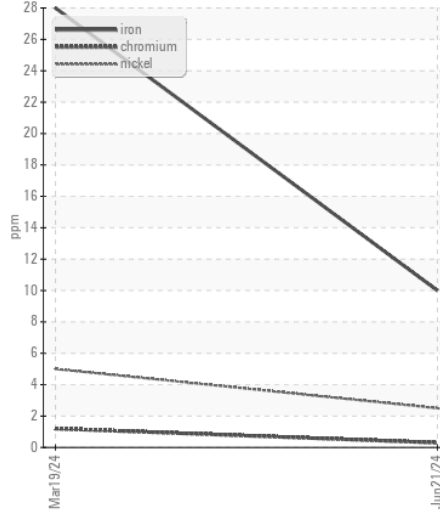
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<b>4</b>	4	---
Boron	ppm	ASTM D5185m	2.5	<b>129</b>	71	---
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m	0.7	<b>83</b>	61	---
Manganese	ppm	ASTM D5185m	0.0	<b>1</b>	<1	---
Magnesium	ppm	ASTM D5185m	256	<b>650</b>	769	---
Calcium	ppm	ASTM D5185m	2057	<b>1627</b>	2605	---
Phosphorus	ppm	ASTM D5185m	935	<b>919</b>	1330	---
Zinc	ppm	ASTM D5185m	1223	<b>1118</b>	1724	---
Sulfur	ppm	ASTM D5185m	4079	<b>3503</b>	4678	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.8</b>	19.9	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>5.9</b>	9.2	---
Visc @ 100°C	cSt	ASTM D445	15.0	<b>12.0</b>	12.7	---

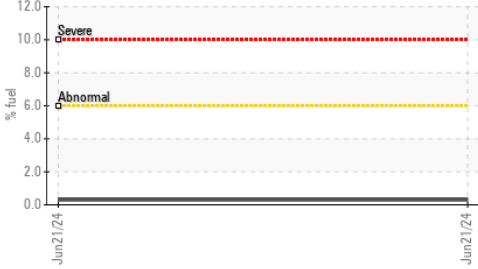
● Viscosity @ 100°C



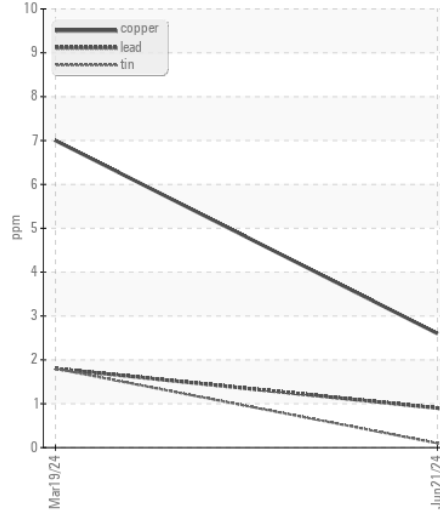
Ferrous Alloys



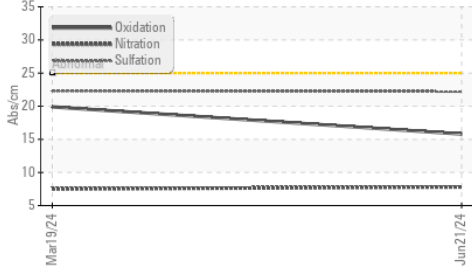
Fuel Dilution



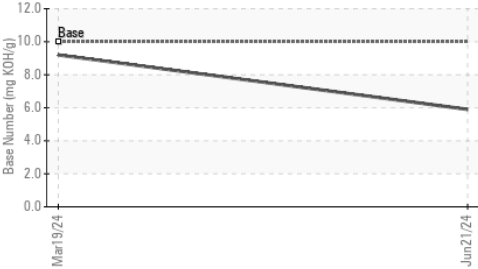
Non-ferrous Metals



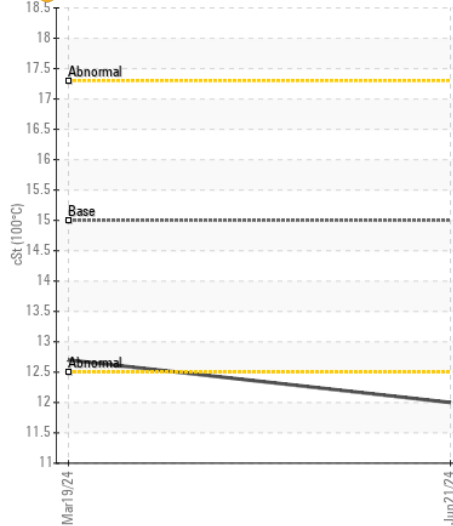
FT-IR (Direct Trend)



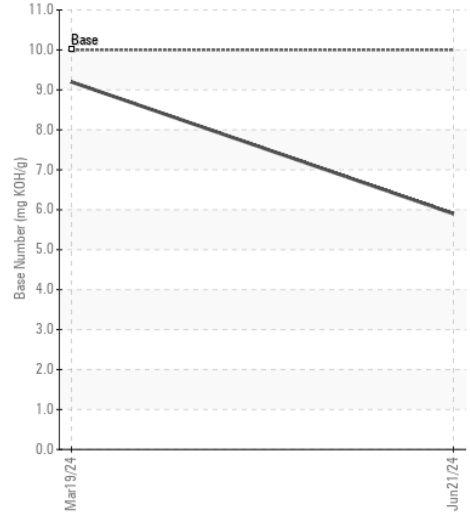
Base Number



● Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : ML0002111 **Received** : 27 Jun 2024  
**Lab Number** : 06223033 **Tested** : 02 Jul 2024  
**Unique Number** : 11101230 **Diagnosed** : 02 Jul 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: FuelDilution, PercentFuel, TBN )

**MCCLUNG-LOGAN EQUIPMENT CO - RICHMOND**  
 1345 MOUNTAIN ROAD  
 GLEN ALLEN, VA  
 US 23060  
 Contact: KYLE RATLIFFE  
 KRATLIFFE@MCCLUNG-LOGAN.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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