



# OIL ANALYSIS REPORT

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

Machine Id  
**VOLVO SD-100-D 001697 (S/N 198137)**  
 Component  
**Diesel Engine**  
 Fluid  
**CASTROL VECTON 15W40 CK4 (22 GAL)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0856139</b>	WC0701113	WC0604468
Sample Date		Client Info		<b>16 Apr 2024</b>	01 Sep 2022	17 Sep 2021
Machine Age	hrs	Client Info		<b>6297</b>	5707	5703
Oil Age	hrs	Client Info		<b>590</b>	4	500
Filter Age	hrs	Client Info		<b>590</b>	4	500
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	SEVERE

## WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>100	<b>▲ 177</b>	▲ 100	▲ 126
Chromium	ppm	ASTM D5185m	>20	<b>6</b>	10	▲ 33
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	2	3
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	3
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>12</b>	● 13	● 34
Lead	ppm	ASTM D5185m	>40	<b>4</b>	<1	6
Copper	ppm	ASTM D5185m	>330	<b>57</b>	5	10
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	4
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

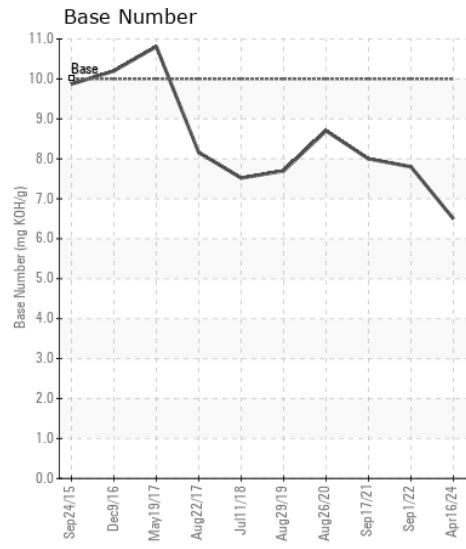
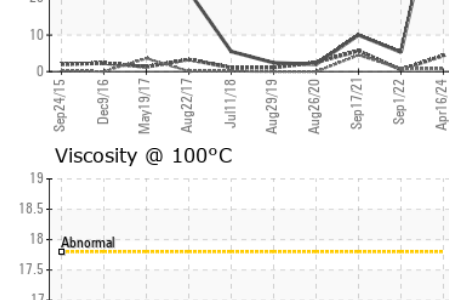
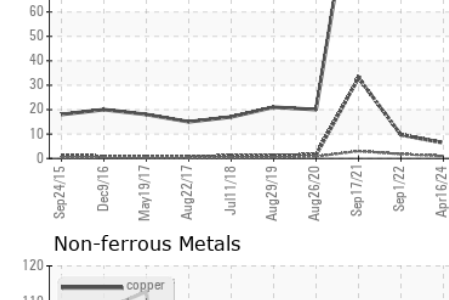
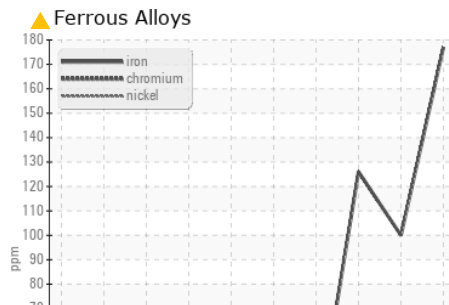
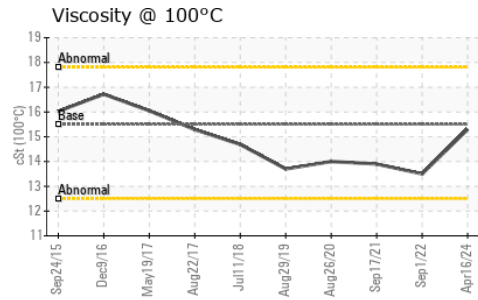
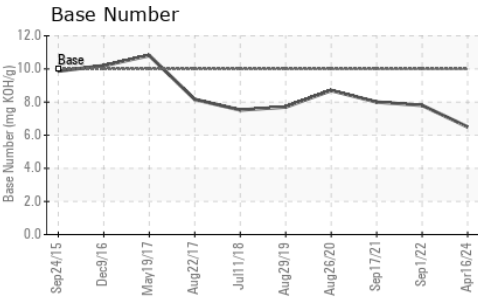
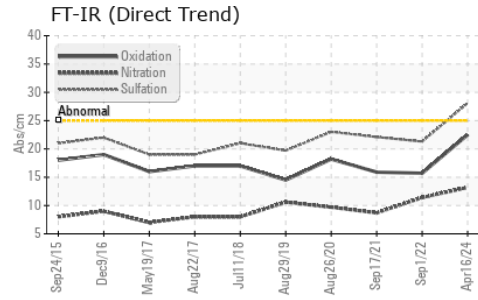
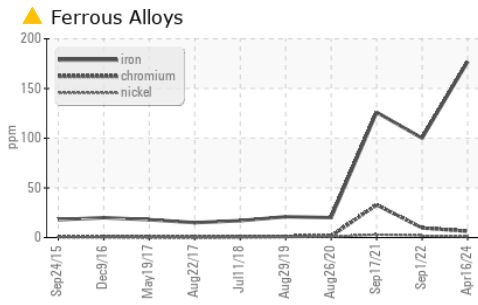
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>22</b>	▲ 39	▲ 144
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	7	8
Fuel		WC Method	>6.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.8</b>	0.8	0.9
Nitration	Abs/cm	*ASTM D7624	>20	<b>13.2</b>	11.4	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>28.1</b>	21.3	22.1
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## 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.

Sodium	ppm	ASTM D5185m		<b>2</b>	2	3
Boron	ppm	ASTM D5185m		<b>39</b>	57	64
Barium	ppm	ASTM D5185m		<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m		<b>96</b>	90	71
Manganese	ppm	ASTM D5185m		<b>2</b>	1	2
Magnesium	ppm	ASTM D5185m		<b>164</b>	131	426
Calcium	ppm	ASTM D5185m		<b>2420</b>	2098	1906
Phosphorus	ppm	ASTM D5185m		<b>1114</b>	1029	1062
Zinc	ppm	ASTM D5185m		<b>1416</b>	1222	1298
Sulfur	ppm	ASTM D5185m		<b>3758</b>	3610	2906
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>22.5</b>	15.7	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>6.5</b>	7.8	8
Visc @ 100°C	cSt	ASTM D445	15.5	<b>15.3</b>	13.5	13.9



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0856139 **Received** : 23 Apr 2024  
**Lab Number** : 06158279 **Tested** : 24 Apr 2024  
**Unique Number** : 10993702 **Diagnosed** : 25 Apr 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: 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)