



VOLVO

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION



Area

[TUCKER]

Machine Id

VOLVO EC550EL 310196

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		VCP447043	VCP428669	VCP414207
Sample Date		Client Info		29 Mar 2024	05 Jan 2024	07 Sep 2023
Machine Age	hrs	Client Info		1729	1236	689
Oil Age	hrs	Client Info		0	500	689
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

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). All other metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	14	10	15
Chromium	ppm	ASTM D5185m	>10	0	0	0
Nickel	ppm	ASTM D5185m	>10	<1	4	2
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	3	2	4
Lead	ppm	ASTM D5185m	>20	<1	<1	2
Copper	ppm	ASTM D5185m	>15	▲ 294	▲ 87	▲ 206
Tin	ppm	ASTM D5185m	>10	3	1	3
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

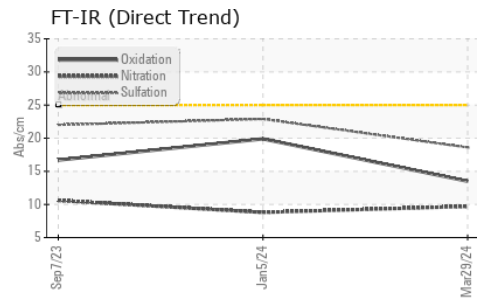
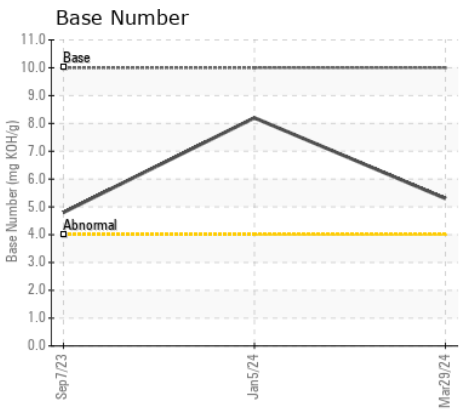
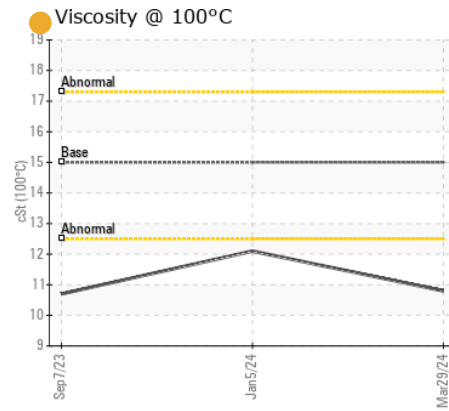
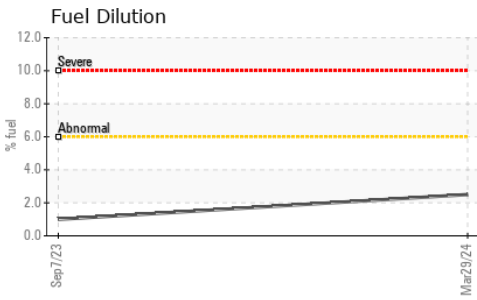
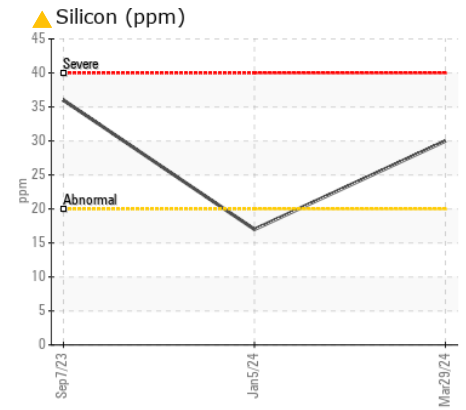
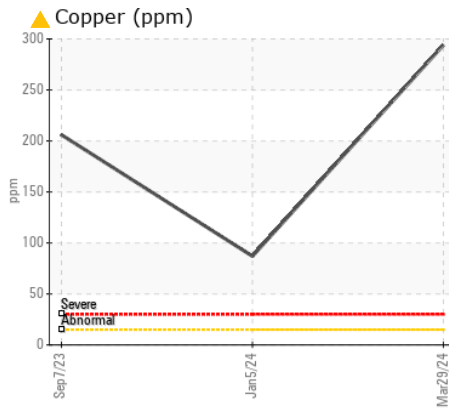
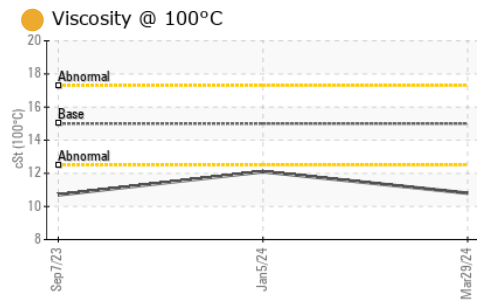
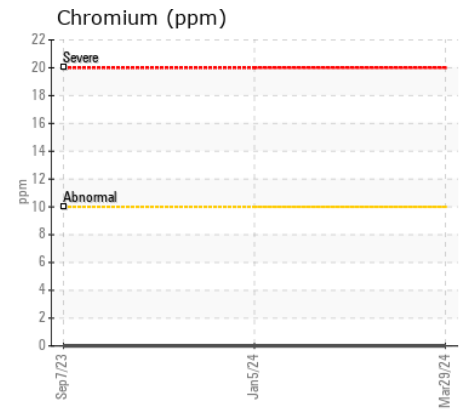
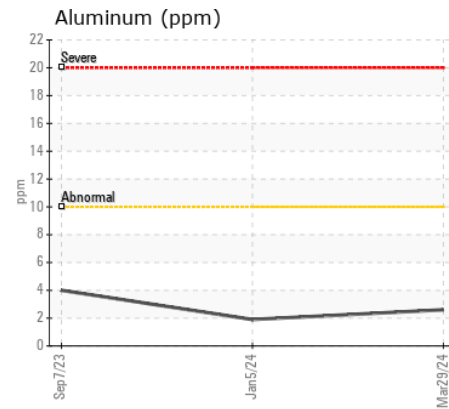
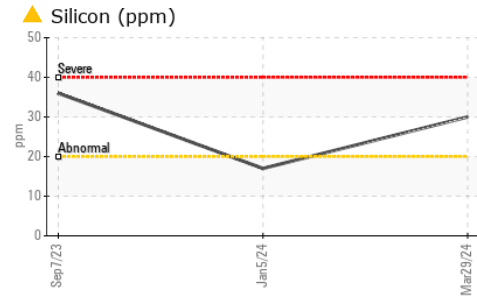
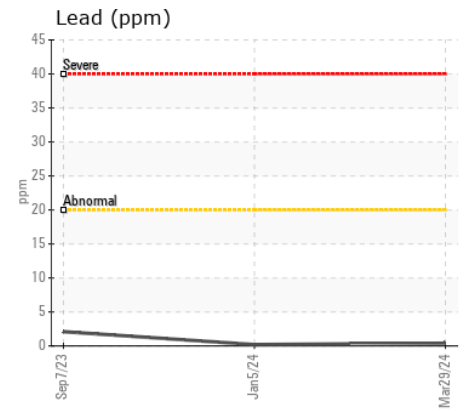
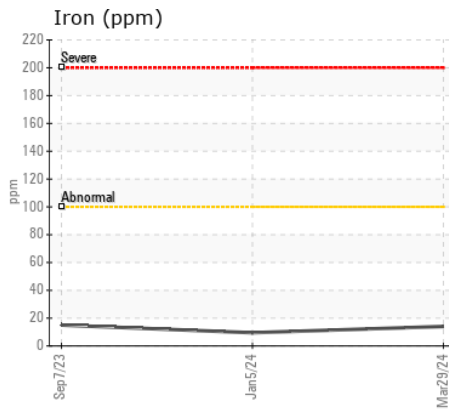
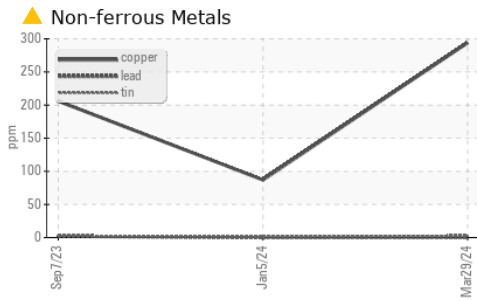
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	▲ 30	17	36
Potassium	ppm	ASTM D5185m	>20	<1	0	2
Fuel	%	ASTM D3524	>6.0	2.5	<1.0	1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.7	8.8	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	22.9	22.0
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	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		3	2	2
Boron	ppm	ASTM D5185m	2.5	45	16	7
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	0.7	87	49	88
Manganese	ppm	ASTM D5185m	0.0	2	<1	2
Magnesium	ppm	ASTM D5185m	256	0	432	54
Calcium	ppm	ASTM D5185m	2057	2217	1772	2131
Phosphorus	ppm	ASTM D5185m	935	1011	943	944
Zinc	ppm	ASTM D5185m	1223	1174	1122	1190
Sulfur	ppm	ASTM D5185m	4079	4392	3017	3633
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.5	19.9	16.7
Base Number (BN)	mg KOH/g	ASTM D2896	10	5.3	8.2	4.8
Visc @ 100°C	cSt	ASTM D445	15.0	● 10.8	● 12.1	● 10.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VCP447043
Lab Number : 06187254
Unique Number : 11044006
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, PercentFuel, TBN)
 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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