



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Area
[W02008479]
Machine Id
VOLVO L90G 617019
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (5 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: W02008479)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		ML0002369	ML0000962	---
Sample Date		Client Info		01 Jul 2024	22 Apr 2024	---
Machine Age	hrs	Client Info		16497	16223	---
Oil Age	hrs	Client Info		16497	16223	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	N/A	---
Filter Changed		Client Info		Changed	N/A	---
Sample Status				ABNORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	3	7	---
Chromium	ppm	ASTM D5185m	>10	0	0	---
Nickel	ppm	ASTM D5185m	>10	0	0	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>10	4	8	---
Lead	ppm	ASTM D5185m	>20	0	0	---
Copper	ppm	ASTM D5185m	>15	0	0	---
Tin	ppm	ASTM D5185m	>10	0	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

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

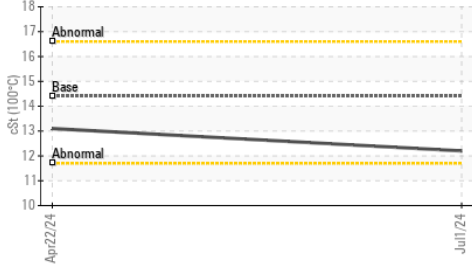
Silicon	ppm	ASTM D5185m	>20	4	5	---
Potassium	ppm	ASTM D5185m	>20	<1	0	---
Fuel	%	ASTM D3524	>6.0	0.2	<1.0	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.2	0.3	---
Nitration	Abs/cm	*ASTM D7624	>20	6.5	7.6	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	20.9	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	---

FLUID CONDITION

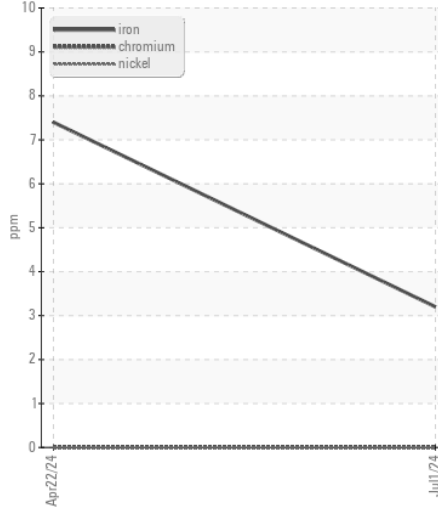
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m	>216	2	1	---
Boron	ppm	ASTM D5185m	250	39	39	---
Barium	ppm	ASTM D5185m	10	0	0	---
Molybdenum	ppm	ASTM D5185m	100	62	46	---
Manganese	ppm	ASTM D5185m		<1	0	---
Magnesium	ppm	ASTM D5185m	450	752	544	---
Calcium	ppm	ASTM D5185m	3000	1357	1956	---
Phosphorus	ppm	ASTM D5185m	1150	974	871	---
Zinc	ppm	ASTM D5185m	1350	1144	1025	---
Sulfur	ppm	ASTM D5185m	4250	3571	3300	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	20.0	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.4	9.8	---
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 12.2	13.1	---

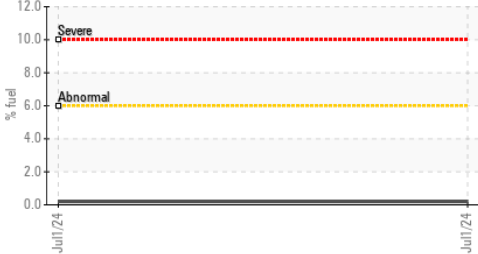
▲ Viscosity @ 100°C



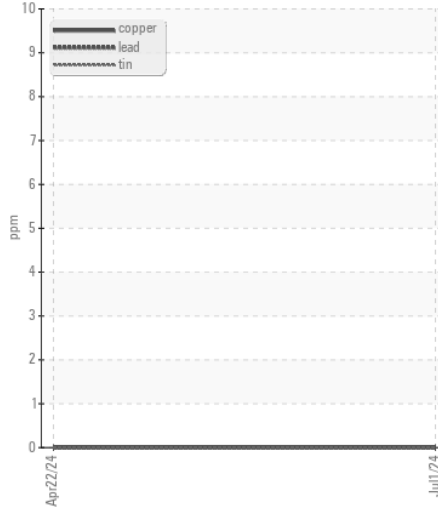
Ferrous Alloys



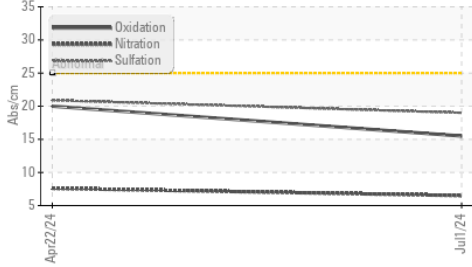
Fuel Dilution



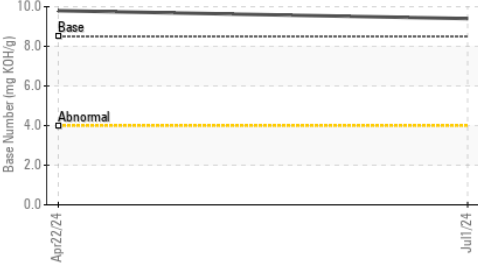
Non-ferrous Metals



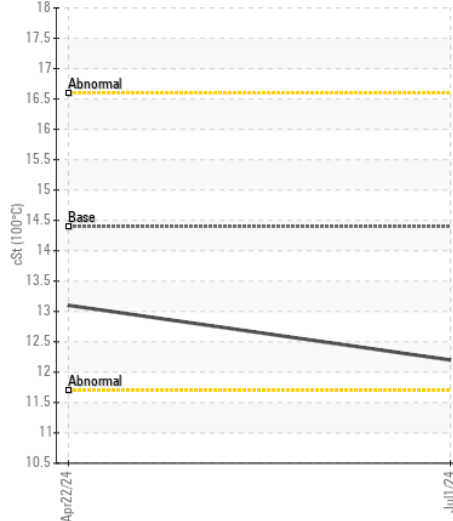
FT-IR (Direct Trend)



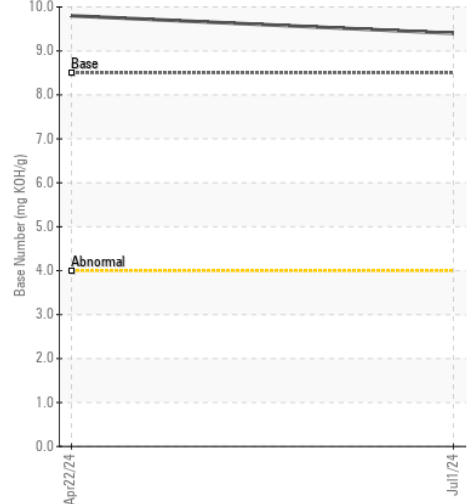
Base Number



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : ML0002369 Received : 02 Jul 2024
 Lab Number : 06226859 Tested : 10 Jul 2024
 Unique Number : 11110352 Diagnosed : 10 Jul 2024 - Angela Borella
 Test Package : CONST (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)