

OIL ANALYSIS REPORT

Area [W05004128] **VOLVO A40F 11613**



Component **Diesel Engine**

MOBIL 15W40 (14 GAL)







DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: W05004128)

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

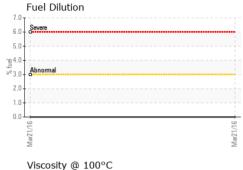
Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

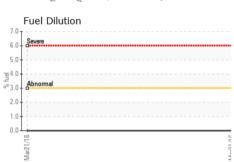
			016 Aug2016 Jan2017	Jul2017 Jan2019 Aug2023		
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		ML0000402	ML0000423	VCP189745
Sample Date		Client Info		28 Mar 2024	16 Feb 2024	08 Jan 2024
Machine Age	hrs	Client Info		15793	15585	15341
Oil Age	hrs	Client Info		250	250	250
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	2	3	<1
Chromium	ppm	ASTM D5185m	>20	<1	0	0
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>30	4	4	2
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>20	3	<1	0
Tin	ppm	ASTM D5185m	>20	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 184	history1 311	history2 256
	ppm		limit/base			
Boron		ASTM D5185m	limit/base	184	311	256
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	184 <1	311 0	256 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	184 <1 85	311 0 109	256 0 104
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	184 <1 85 <1	311 0 109 0	256 0 104 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	184 <1 85 <1 592	311 0 109 0 658	256 0 104 0 631
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	184 <1 85 <1 592 1496	311 0 109 0 658 1568	256 0 104 0 631 1444
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	184 <1 85 <1 592 1496 834	311 0 109 0 658 1568 736	256 0 104 0 631 1444 697
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	184 <1 85 <1 592 1496 834 978	311 0 109 0 658 1568 736 859	256 0 104 0 631 1444 697 871
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		184 <1 85 <1 592 1496 834 978 2780	311 0 109 0 658 1568 736 859 2418	256 0 104 0 631 1444 697 871 2398
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	184 <1 85 <1 592 1496 834 978 2780 current	311 0 109 0 658 1568 736 859 2418 history1	256 0 104 0 631 1444 697 871 2398 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	184 <1 85 <1 592 1496 834 978 2780 current	311 0 109 0 658 1568 736 859 2418 history1	256 0 104 0 631 1444 697 871 2398 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >118 >20	184 <1 85 <1 592 1496 834 978 2780 current 5	311 0 109 0 658 1568 736 859 2418 history1 6 <1	256 0 104 0 631 1444 697 871 2398 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >118 >20	184 <1 85 <1 592 1496 834 978 2780 current 5 1	311 0 109 0 658 1568 736 859 2418 history1 6 <1	256 0 104 0 631 1444 697 871 2398 history2 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >118 >20 >3.0	184 <1 85 <1 592 1496 834 978 2780 current 5 1 2 <1.0	311 0 109 0 658 1568 736 859 2418 history1 6 <1 0 <1.0	256 0 104 0 631 1444 697 871 2398 history2 4 1 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >118 >20 >3.0 limit/base	184 <1 85 <1 592 1496 834 978 2780 current 5 1 2 <1.0 current	311 0 109 0 658 1568 736 859 2418 history1 6 <1 0 <1.0	256 0 104 0 631 1444 697 871 2398 history2 4 1 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >20 >118 >20 >3.0 limit/base >3 >20	184 <1 85 <1 592 1496 834 978 2780 current 5 1 2 <1.0 current 0.3	311 0 109 0 658 1568 736 859 2418 history1 6 <1 0 <1.0 history1 0.3	256 0 104 0 631 1444 697 871 2398 history2 4 1 <1.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	limit/base >20 >118 >20 >3.0 limit/base >3 >20	184 <1 85 <1 592 1496 834 978 2780 current 5 1 2 <1.0 current 0.3 5.8	311 0 109 0 658 1568 736 859 2418 history1 6 <1 0 <1.0 history1 0.3 6.3	256 0 104 0 631 1444 697 871 2398 history2 4 1 <1.0 history2 0.3 6.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624	limit/base >20 >118 >20 >3.0 limit/base >3 >20 >30	184 <1 85 <1 592 1496 834 978 2780 current 5 1 2 <1.0 current 0.3 5.8 21.4	311 0 109 0 658 1568 736 859 2418 history1 6 <1 0 <1.0 history1 0.3 6.3 22.5	256 0 104 0 631 1444 697 871 2398 history2 4 1 <1 <1.0 history2 0.3 6.7 22.1



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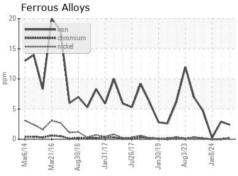
Visco	sity @	100°C					
Abnom	nal						
(2001) 15 14							
13 Abnom	nal	\sim	V	~		_	\
12	9	17	1	6	23	- 44	
Mar6/14	Mar21/16	Jan31/	Jul26/1	Jan30/	Aug3/2	Jan8/	

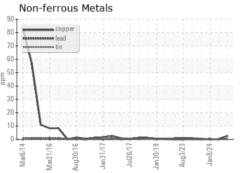


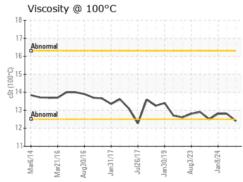
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

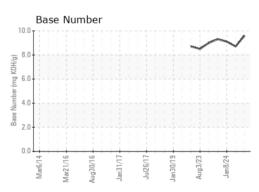
FLUID PROPERTIES		method			history2
Visc @ 100°C	cSt	ASTM D445	12.4	12.8	12.8

GRAPHS













Laboratory Sample No. Lab Number : 06133803 Unique Number: 10953268

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : ML0000402

Test Package : CONST (Additional Tests: FuelDilution, TBN)

Received **Tested**

Diagnosed

: 29 Mar 2024

: 03 Apr 2024 : 03 Apr 2024 - Jonathan Hester

MCCLUNG-LOGAN EQUIPMENT CO - MANASSAS

8450 QUARRY ROAD MANASSAS, VA US 20110

Contact: MIKE MAYHUGH MMAYHUGH@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.

T: (703)393-7344 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (703)393-7844

Report Id: VOLVO0002 [WUSCAR] 06133803 (Generated: 04/03/2024 09:21:40) Rev: 1

Submitted By: DARRELL ANDES