



# OIL ANALYSIS REPORT

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

Machine Id  
**VOLVO 128904**  
Component  
**Front Diesel Engine**  
Fluid  
**SAE 15W40 (11 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KLMFA13367</b>	KLMFA13441	KLMFA06557
Sample Date		Client Info		<b>16 Nov 2013</b>	05 Oct 2013	17 Jul 2013
Machine Age	mls	Client Info		<b>2583456</b>	2549609	2517234
Oil Age	mls	Client Info		<b>99895</b>	66048	33673
Filter Age	mls	Client Info		<b>99895</b>	66048	33673
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal for time on oil.

Iron	ppm	ASTM D5185m	>100	<b>137</b>	107	69
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	4	3
Nickel	ppm	ASTM D5185m	>2	<b>2</b>	1	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>16</b>	18	18
Lead	ppm	ASTM D5185m	>40	<b>7</b>	8	6
Copper	ppm	ASTM D5185m	>330	<b>27</b>	24	23
Tin	ppm	ASTM D5185m	>15	<b>2</b>	2	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

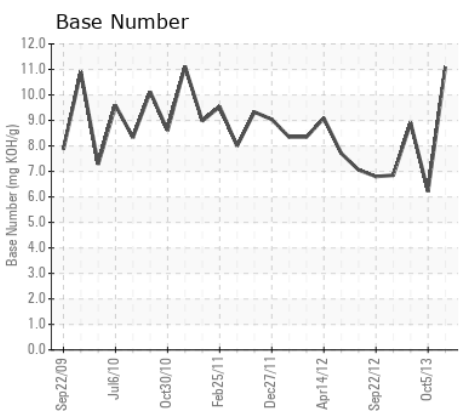
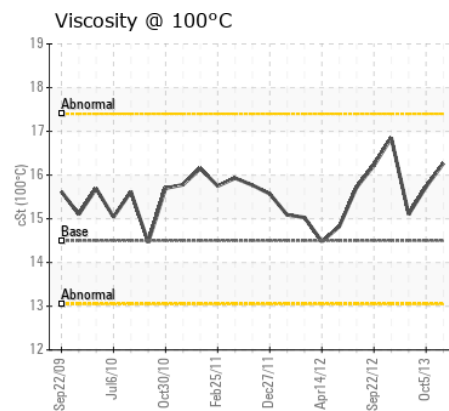
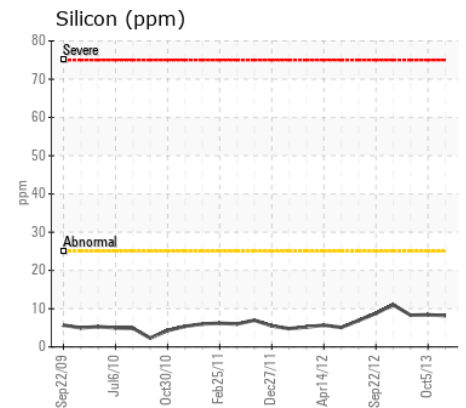
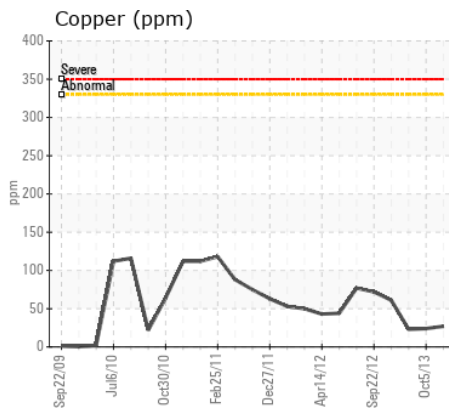
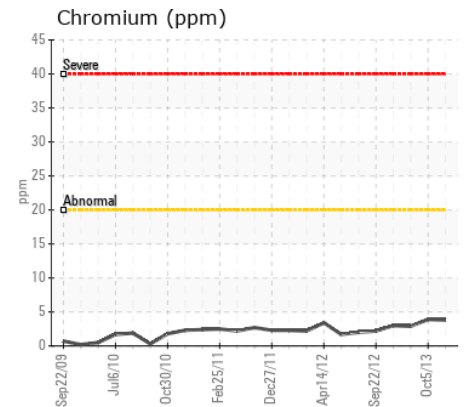
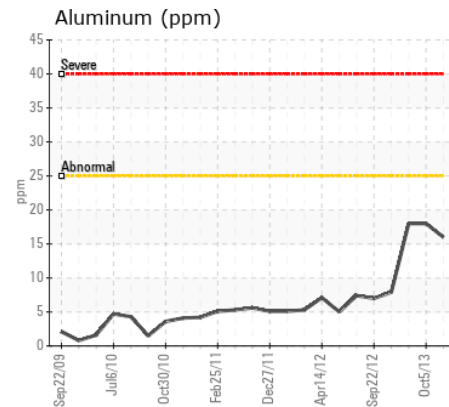
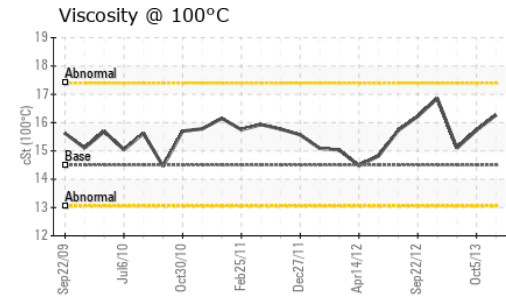
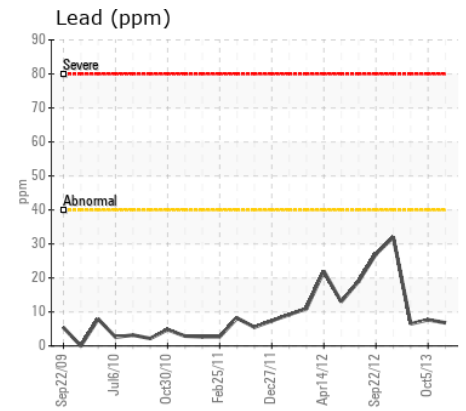
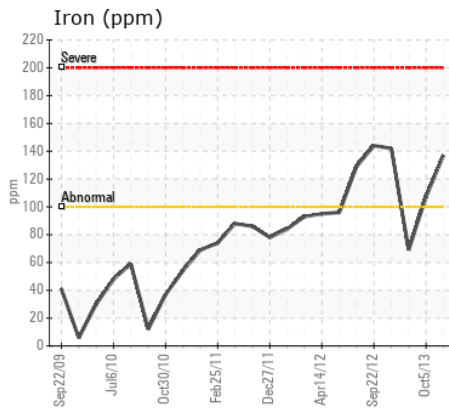
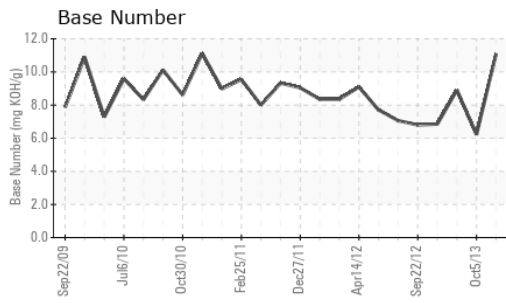
There is no indication of any contamination in the component.

Silicon	ppm	ASTM D5185m	>25	<b>8</b>	8	8
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	<1	3
Fuel		WC Method	>6.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.9</b>	2.5	1
Nitration	Abs/cm	*ASTM D7624		<b>5.</b>	10.	6.
Sulfation	Abs/.1mm	*ASTM D7415		<b>15.</b>	26.	18.
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	>0.1	<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>8</b>	6	5
Boron	ppm	ASTM D5185m		<b>50</b>	39	77
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>91</b>	96	84
Manganese	ppm	ASTM D5185m		<b>2</b>	2	<1
Magnesium	ppm	ASTM D5185m		<b>366</b>	382	347
Calcium	ppm	ASTM D5185m		<b>1684</b>	1709	1553
Phosphorus	ppm	ASTM D5185m		<b>1014</b>	1038	1008
Zinc	ppm	ASTM D5185m		<b>1283</b>	1362	1270
Sulfur	ppm	ASTM D5185m		<b>1232</b>	1569	2758
Oxidation	Abs/.1mm	*ASTM D7414		<b>9.</b>	19.	11.
Base Number (BN)	mg KOH/g	ASTM D2896		<b>11.09</b>	6.22	8.9
Visc @ 100°C	cSt	ASTM D445	14.5	<b>16.27</b>	15.73	15.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KLMFA13367 **Received** : 09 Dec 2013  
**Lab Number** : 03411258 **Diagnosed** : 10 Dec 2013  
**Unique Number** : 6469045 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: PQ )

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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)