



# OIL ANALYSIS REPORT

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



Machine Id  
**VOLVO 118518**  
Component  
**Front Diesel Engine**  
Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (40 QTS)**

## RECOMMENDATION

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>KLMFA23922</b>	KLMFA07587	KLMFA07580
Sample Date		Client Info		<b>09 Jan 2017</b>	13 Jul 2013	01 Jun 2013
Machine Age	mls	Client Info		<b>585169</b>	509165	479049
Oil Age	mls	Client Info		<b>34056</b>	121723	91607
Filter Age	mls	Client Info		<b>34056</b>	121723	91607
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>ABNORMAL</b>	NORMAL	ATTENTION

## WEAR

Valve wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>37</b>	247	208
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	6	6
Nickel	ppm	ASTM D5185m	>2	<b>▲ 10</b>	5	6
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>7</b>	22	23
Lead	ppm	ASTM D5185m	>40	<b>2</b>	43	46
Copper	ppm	ASTM D5185m	>330	<b>45</b>	94	<b>▲ 94</b>
Tin	ppm	ASTM D5185m	>15	<b>2</b>	4	6
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
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.

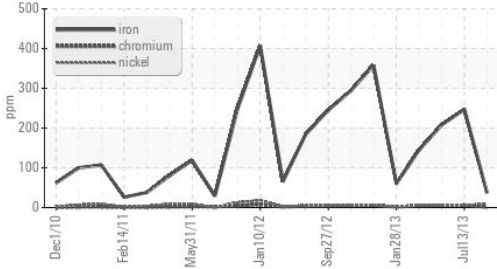
Silicon	ppm	ASTM D5185m	>25	<b>13</b>	11	9
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	7	6
Fuel		WC Method	>6.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.5</b>	1.1	1.4
Nitration	Abs/cm	*ASTM D7624		<b>11.</b>	10.	13.
Sulfation	Abs/.1mm	*ASTM D7415		<b>27.</b>	25.	31.
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

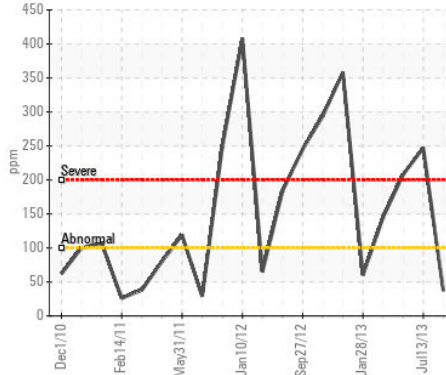
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>6</b>	15	15
Boron	ppm	ASTM D5185m	151	<b>91</b>	55	42
Barium	ppm	ASTM D5185m	0.4	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m	250	<b>83</b>	76	71
Manganese	ppm	ASTM D5185m		<b>1</b>	5	6
Magnesium	ppm	ASTM D5185m	0	<b>397</b>	287	266
Calcium	ppm	ASTM D5185m	2046	<b>1604</b>	1698	1661
Phosphorus	ppm	ASTM D5185m	1043	<b>1004</b>	993	1014
Zinc	ppm	ASTM D5185m	943	<b>1108</b>	1219	1098
Sulfur	ppm	ASTM D5185m	5012	<b>2205</b>	3333	3906
Oxidation	Abs/.1mm	*ASTM D7414		<b>26.</b>	25.	31.
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	<b>5.70</b>	7.2	5.03
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.28</b>	15.55	14.37

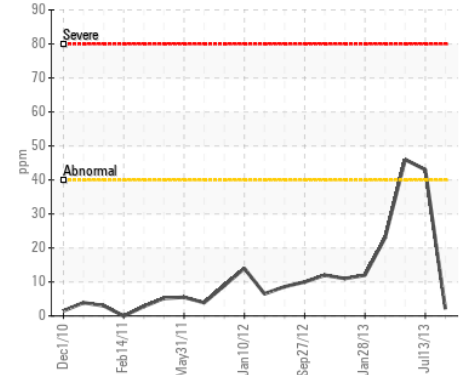
▲ Ferrous Alloys



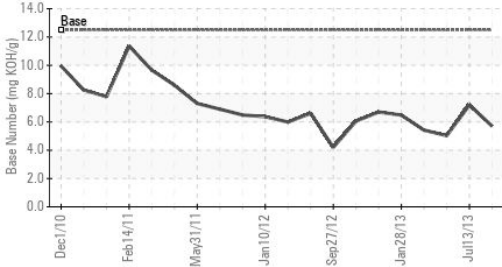
Iron (ppm)



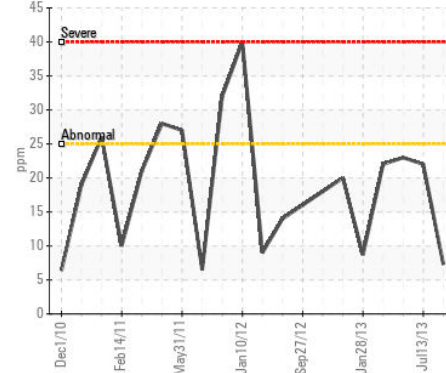
Lead (ppm)



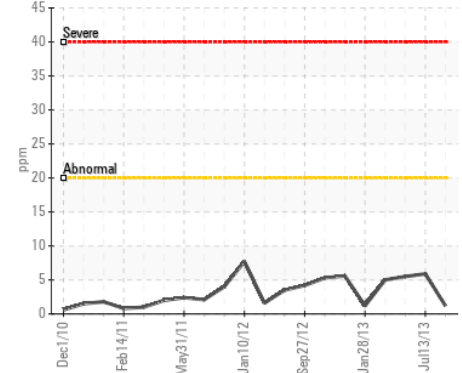
Base Number



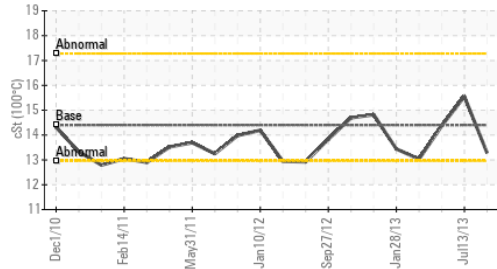
Aluminum (ppm)



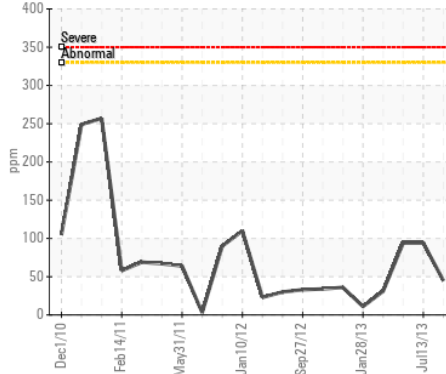
Chromium (ppm)



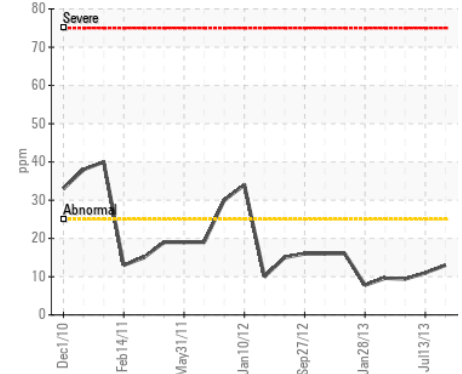
Viscosity @ 100°C



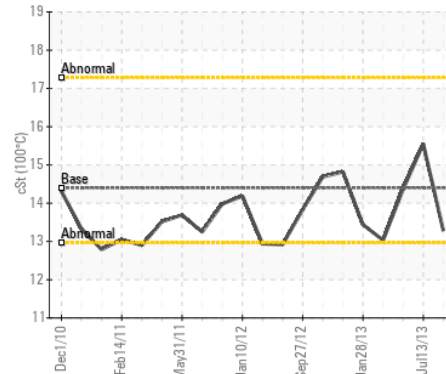
Copper (ppm)



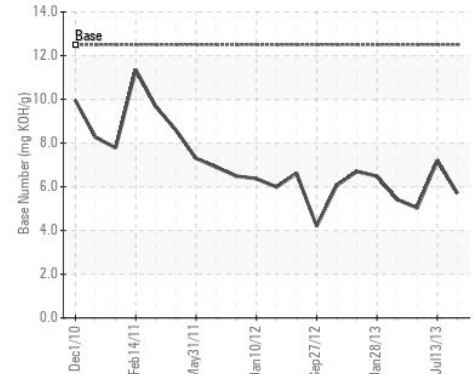
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KLMFA23922 **Received** : 16 Jan 2017  
**Lab Number** : 04142993 **Diagnosed** : 18 Jan 2017  
**Unique Number** : 7666379 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2

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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)