



# OIL ANALYSIS REPORT

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

Machine Id  
**FREIGHTLINER 118582**

Component  
**Front Diesel Engine**

Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (11 GAL)**

## RECOMMENDATION

No corrective action is recommended at this time. The 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		<b>KLMFA08640</b>	KLMFA06568	KLMFA04302
Sample Date		Client Info		<b>04 Feb 2013</b>	17 Dec 2012	15 Oct 2012
Machine Age	mls	Client Info		<b>1632314</b>	1601534	1570690
Oil Age	mls	Client Info		<b>180945</b>	150165	146084
Filter Age	mls	Client Info		<b>180945</b>	150165	146084
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>	ABNORMAL	ABNORMAL

## WEAR

The copper level is marginal. The iron level is marginal.

Iron	ppm	ASTM D5185m		<b>▲ 160</b>	113	123
Chromium	ppm	ASTM D5185m		<b>5</b>	3	4
Nickel	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m		<b>9</b>	4	8
Lead	ppm	ASTM D5185m		<b>3</b>	2	6
Copper	ppm	ASTM D5185m		<b>▲ 110</b>	74	▲ 134
Tin	ppm	ASTM D5185m		<b>0</b>	2	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

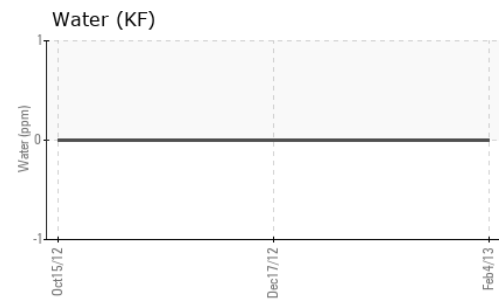
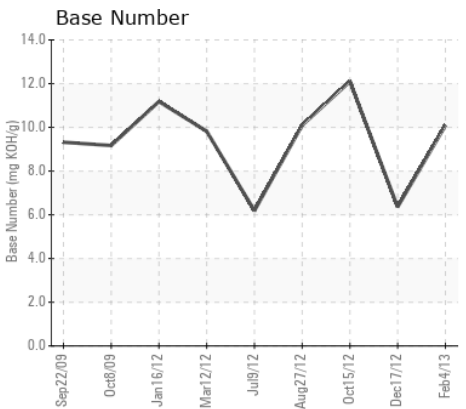
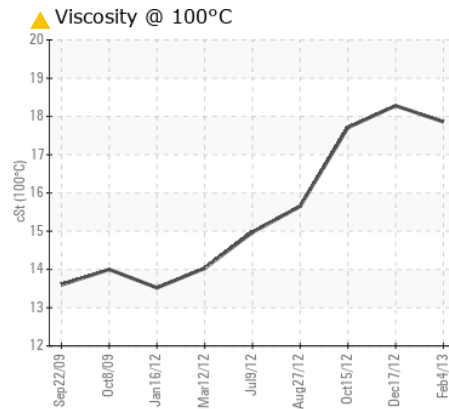
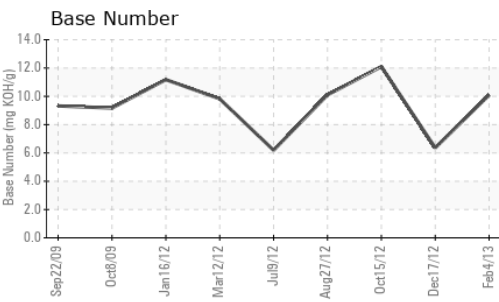
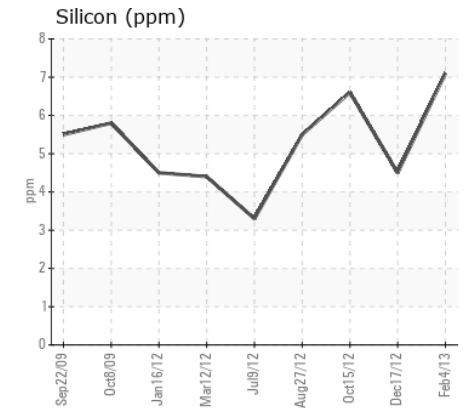
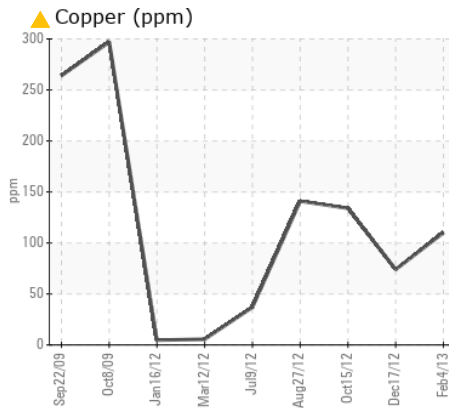
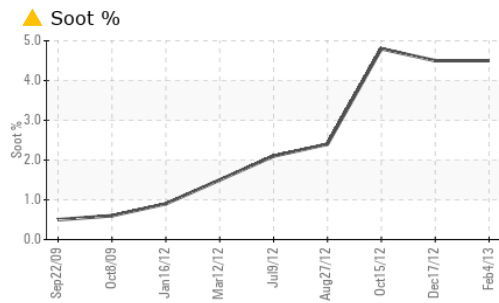
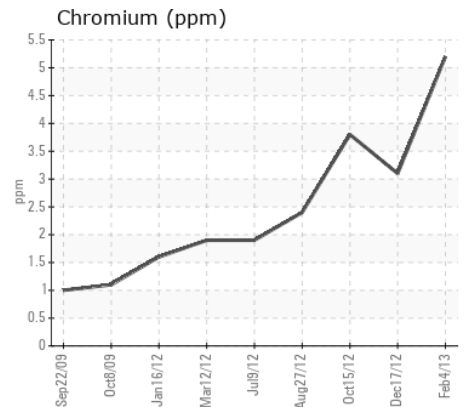
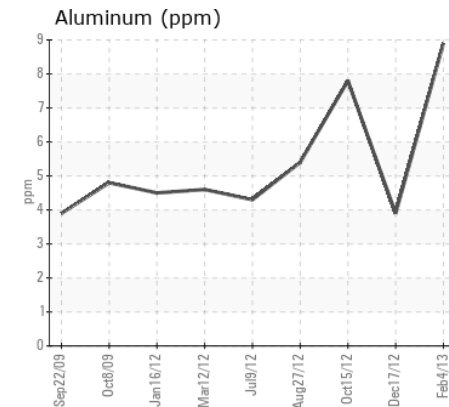
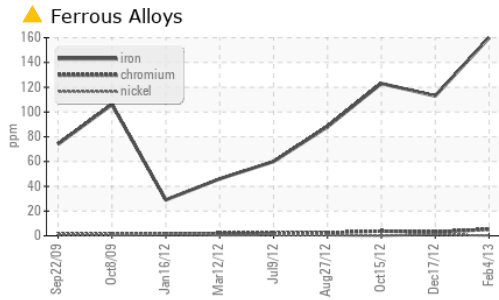
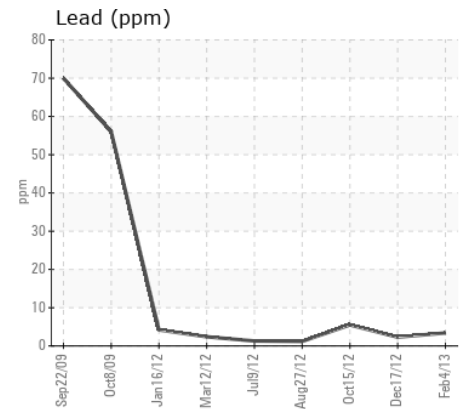
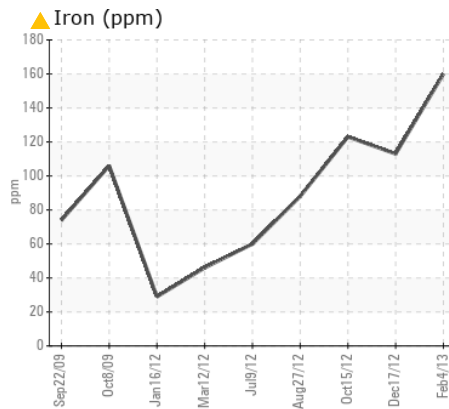
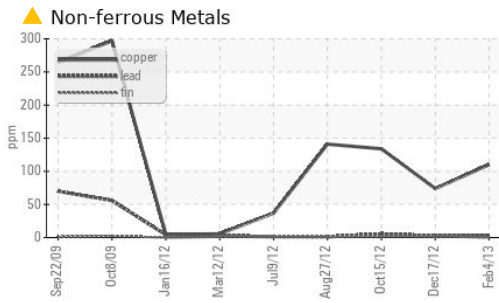
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m		<b>7</b>	4	7
Potassium	ppm	ASTM D5185m		<b>&lt;1</b>	3	3
Fuel		WC Method		<b>&lt;1.0</b>	<1.0	<1.0
Water	%	ASTM D6304		<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>▲ 4.5</b>	▲ 4.5	▲ 4.8
Nitration	Abs/cm	*ASTM D7624		<b>11.</b>	10.	5.
Sulfation	Abs/.1mm	*ASTM D7415		<b>30.</b>	29.	16.
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		<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The oil viscosity is higher than normal. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>6</b>	2	3
Boron	ppm	ASTM D5185m		<b>56</b>	58	54
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>55</b>	36	47
Manganese	ppm	ASTM D5185m		<b>1</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>262</b>	215	200
Calcium	ppm	ASTM D5185m		<b>2023</b>	1754	2200
Phosphorus	ppm	ASTM D5185m		<b>1074</b>	968	1047
Zinc	ppm	ASTM D5185m		<b>1301</b>	1013	1219
Sulfur	ppm	ASTM D5185m		<b>2843</b>	2940	3186
Oxidation	Abs/.1mm	*ASTM D7414		<b>18.</b>	15.	7.
Base Number (BN)	mg KOH/g	ASTM D2896		<b>10.09</b>	6.36	12.1
Visc @ 100°C	cSt	ASTM D445		<b>▲ 17.86</b>	▲ 18.28	▲ 17.71
Fluid Type		*In-house		<b>SAE_ENG_DE</b>	UNKNOWN	UNKNOWN



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KLMFA08640 **Received** : 12 Feb 2013  
**Lab Number** : 03227678 **Diagnosed** : 15 Feb 2013  
**Unique Number** : 6170278 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 2 ( Additional Tests: FluidDetermination, KF, 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)